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COMMERCE

JUNE 1955 35c

Atom's Impact on Investments

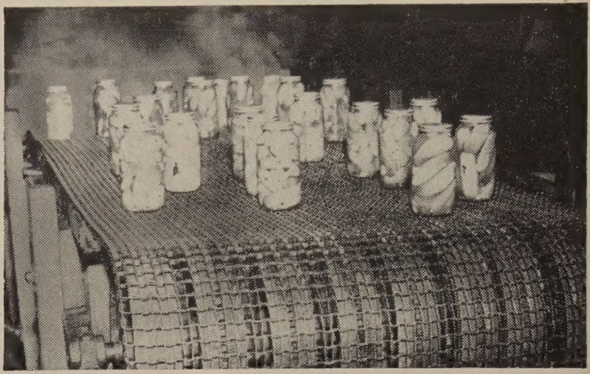
Industry Wars on Noise

Dizzy World of High Fashion

The Birth of a Career (See page 5)

Only STEEL can do so many jobs so well

Fresh Air Design. That startling building is a *parking* garage. The walls are made from over 11 miles of USS Stainless Steel strand, held tight under 1000 lbs. tension with American Quality Springs. The strand prevents cars from rolling overboard, and makes this garage one of the most beautiful buildings in Chicago.



Hot Pickles. Those bottled pickles are taking their last ride on a USS Cyclone flat wire conveyor belt. Notice the open mesh that allows heat and steam to escape. Cyclone makes all types of conveyor belts, including types that can actually curve and go around sharp corners.

Tomorrow's Sirloin Steak needs a square meal today. In the South, many farmers treat their pastures with USS Basic Slag—a high phosphorus, high-lime by-product of U.S. Steel's southern steel-making process. Basic Slag encourages the growth of thick, rich pasture grass.

Portable Steam. It's actually a steam radiator, but you can move it to any room and plug it into any wall socket for fast, even fume-free heat. The radiator is made entirely from USS Steel. As a result, the unit is light and strong; and it heats up 4 times faster than a comparable heavyweight iron radiator.

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This trade-mark is your guide to quality steel

SEE THE UNITED STATES STEEL HOUR. It's a full-hour TV program presented every other week by United States Steel. Consult your local newspaper for time and station.

UNITED STATES STEEL

For further information on any product mentioned in this advertisement, write United States Steel, 525 William Penn Place, Pittsburgh 30, Pa.

AMERICAN BRIDGE . . AMERICAN STEEL & WIRE and CYCLONE FENCE . . COLUMBIA-GENEVA STEEL . . CONSOLIDATED WESTERN STEEL . . GERRARD STEEL STRAPPING . . NATIONAL TUBE
OIL WELL SUPPLY . . TENNESSEE COAL & IRON . . UNITED STATES STEEL PRODUCTS . . UNITED STATES STEEL SUPPLY . . *Divisions of* UNITED STATES STEEL CORPORATION, PITTSBURGH
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5-469

Englewood and Allen-Bradley Bring You

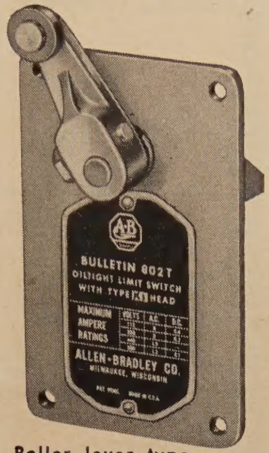
OILTIGHT LIMIT SWITCHES

Here is a new line of remarkably compact Allen-Bradley limit switches . . . streamlined for fine appearance and built for millions of failure-free operations.

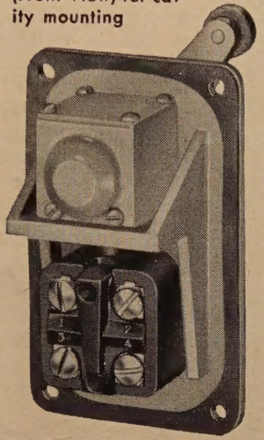
The operating heads of these limit switches may be attached to the switch body in four definite locations, each 90 degrees apart. A large selection of pushrods, lever arms, and other actuating mechanisms is available.

The name plate cover has a synthetic rubber gasket to exclude oil. Terminals are easily accessible by removing the cover plate. The body is threaded for ½" conduit. The switch mechanism is snap-acting with one single pole normally open and one single pole normally closed contact, electrically separated.

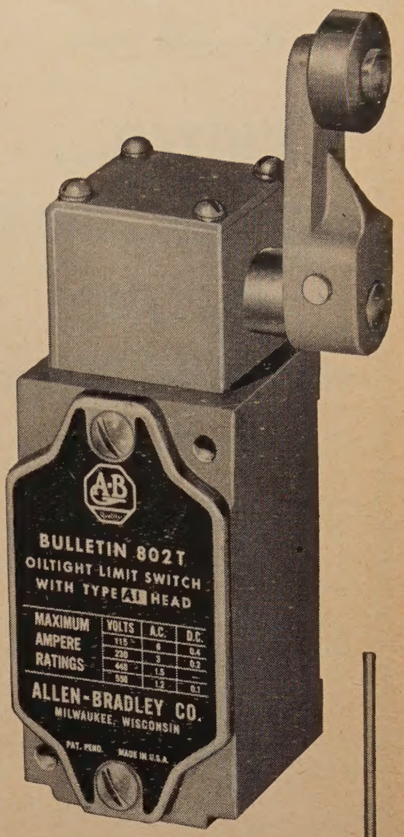
The new Bulletin 802T limit switches are designed for machine tool applications. For further information send for a copy of Allen-Bradley Bulletin 802T.



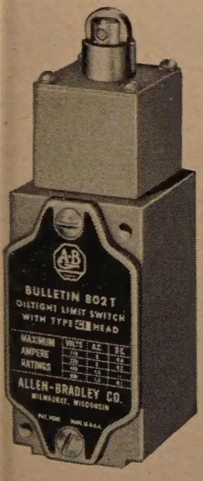
Roller lever type (Front View) for cavity mounting



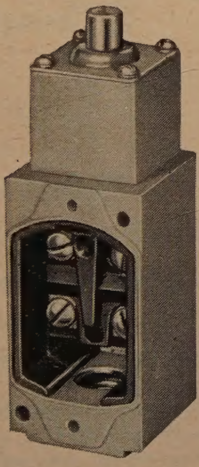
Roller lever type (Rear View) showing terminals for n.o. & n.c. contacts



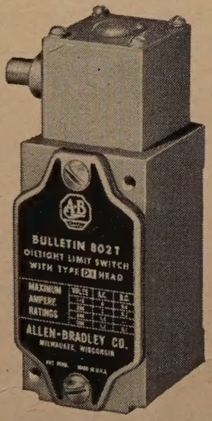
Bulletin 802T roller lever limit switch



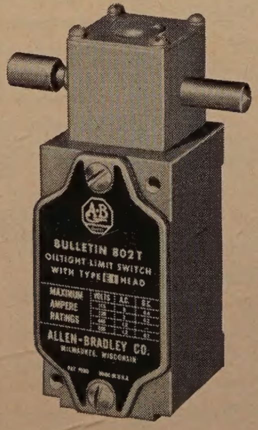
Pushrod limit switch with roller for vertical motion of the pushrod



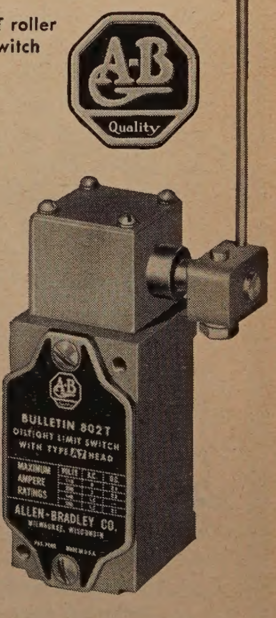
Pushrod limit switch without roller—cover off to show terminals



Pushrod limit switch for horizontal motion of the pushrod



Pushrod limit switch with side pushrod and maintained contacts



Lever operated limit switch with a long and flexible operating rod

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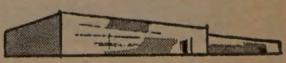

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statistics of . . .

Chicago Business

	April, 1955	March, 1955	April, 1954
Building permits	1,670	1,227	1,169
Cost	$ 23,277,400	$ 25,594,100	$ 18,680,900
Contracts awarded on building projects, Cook Co.	5,075	3,825	2,810
Cost	$ 141,087,000	$ 106,198,000	$ 68,823,000
(F .W. Dodge Corp.)			
Real estate transfers	7,981	8,487	7,808
Consideration	$ 4,052,794	$ 5,574,161	$ 6,822,597
Bank clearings	$ 4,230,332,284	$ 4,514,453,152	$ 4,006,833,261
Bank debits to individual accounts:			
7th Federal Reserve District	$24,268,000,000	$27,883,000,000	$22,340,000,000
Chicago only	$12,210,890,000	$14,624,394,000	$11,176,844,000
(Federal Reserve Board)			
Bank loans (outstanding)	$ 2,941,000,000	$ 2,861,000,000	$ 2,823,000,000
Midwest Stock Exchange transactions:			
Number of shares traded	1,908,000	2,394,000	1,583,029
Market value of shares traded	$ 72,791,256	$ 87,720,825	$ 54,586,851
Railway express shipments, Chicago area	832,068	937,594	927,278
Air express shipments, Chicago area	66,722	73,821	60,687
L.C.L. merchandise cars	18,641	20,649	17,934
Electric power production, kwh	1,475,424,000	1,612,472,000	1,365,195,000
Industrial gas sales, therms	14,635,360	15,312,615	13,736,565
Steel production (net tons)	1,844,100	1,863,900	1,417,900
Revenue passengers carried by Chicago Transit Authority lines:			
Surface division	43,451,669	45,574,978	46,458,957
Rapid transit division	9,346,721	9,939,593	9,419,326
Postal receipts	$ 12,385,454	$ 14,097,722	$ 12,534,145
Air passengers:			
Arrivals	356,766	321,221	296,878
Departures	365,648	330,847	303,318
Consumers' Price Index (1947-49=100)	116.9	117.0	116.5
Receipts of salable livestock	402,493	477,126	334,838
Unemployment compensation claimants, Cook & DuPage counties	48,609	54,101	71,202
Families on relief rolls:			
Cook County	29,645	30,249	21,245
Other Illinois counties	17,474	19,243	15,665

July, 1955, Tax Calendar

Date Due	Tax	Returnable to
1	Renew city business licenses which expired June 30, 1955	City Collector
1	Illinois Domestic and Foreign Corporation Franchise Tax due for year July 1, 1955, to June 30, 1956	Secretary of State
15	Illinois Retailers' Occupation Tax return and payment for month of June	Dir. of Revenue (Ill.)
15	If total O.A.B. taxes (employer and employe) plus income tax withheld in previous month exceeds $100, pay amount to or remittance may be made at end of month with quarterly return directly to	Authorized Depositary Dist. Dir. of Int. Rev.
15	Quarterly payment of estates tax	Dist. Dir. of Int. Rev.
31	Illinois Unemployment Compensation contribution and wage report, and payment for second quarter of 1955 (UC-3 and UC-40)	Dir., Dept. of Labor
31	Third quarterly installment of 1954 Federal Unemployment Compensation Tax	Dist. Dir. of Int. Rev.
31	Federal Excise Tax return and payment due for second quarter 1955	Dist. Dir. of Int. Rev.
31	Quarterly return and payment (by depositary receipts or cash) of income and O.A.B. tax withheld by employers for second quarter of 1955 (Form 941). Domestic help (Form 942)	Dist. Dir. of Int. Rev.

COMMERCE

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in this issue...

The rapid development of atomic energy is exerting powerful influences upon all segments of the financial world. Gordon R. Molesworth (p. 13) discusses these influences and has some words of advice for the potential investor. On page 15, W. H. Burhop tells what industry is doing about production noises that are harmful to the hearing of employes. D. C. Burnham's article (p. 16) points out that automation is the next logical step in the evolution of our manufacturing process with only one big problem remaining: how to bring it about more quickly. It's a woman's fundamental prerogative to change her mind and she does quite frequently, particularly when it comes to the style of clothes she wears. Lewis A. Riley (p. 18) takes the reader into the world of high fashion. Spray-on paints, insecticides and other products pressure packed in aerosol containers have captured America's fancy and resulted in another new industry. John L. Kent tells of this booming, post war product on page 20.

• • •

Our Cover

The greatest single merchandising step the airlines have ever made was placing women aboard their planes as stewardesses, according to William A. Patterson, president of United Airlines. On our cover he pins wings on Lorraine Johnson, who has just graduated from United's school for stewardesses and is starting her career. She is joining the ranks of 10,000 women all over the world, who fly as regular crew members on scheduled airline flights.

This career for women started 25 years ago when United tried a "three month experiment." At that time the line hired eight registered nurses, one of whom was Mrs. Harriet Fry Wisner, 515 Oakdale Avenue, Chicago, Illinois, at the left on our cover, to test "the psychological impact of having pretty young women to care for passengers." They dressed in uniforms like the one worn by present-day stewardess Flo Tabbitt, who is watching the "pinning" ceremony at the celebration marking the 25th anniversary of stewardess service.

While United was the first to employ women for flight duty, the prac-

(Continued on page 39)

Kwik-Kafe Serves Your Employees

Better Coffee at Lower Cost with Less Wasted Time

COMPARE

Company cafeterias pay attendants' salaries and serve coffee in one congested area. Kwik-Kafe automatic machines, as many as you need, are placed at strategic points through your plant. Workers get their coffee (without waiting) close to their job, saving you time and money.

Outside coffee breaks waste 7 to 10 minutes of employees' time — going, waiting for service and returning. You can't expect extra production when resting time is spent fighting crowds. Kwik-Kafe serves delicious fresh coffee on-the-spot. Employees return to work refreshed in less time.

Coffee services make coffee 2 to 6 hours in advance. You know how coffee tastes when it is three or four hours old. Kwik-Kafe serves delicious fresh-frozen coffee made automatically at lower cost.

Other vending machines serve a beverage made from powdered coffee which has lost its delicate flavor and aroma in the drying process. Kwik-Kafe is made from a fresh-frozen liquid concentrate of pure coffee, served in our exclusive patented machine. User simply dials for black coffee, coffee with pure cane sugar, with fresh Bowman cream, or with both.

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The Editor's Page

Reconversion Without Cushions

urrently just about all of the economic indicators are umping against the highs reached in the 1953 boom r have broken into new high ground. This has hapened several times before since the end of World Var II. There is, however, a vast difference between ne present booming level of business and previous ost World War II periods of prosperity.

The present high level of business is based on vigorus civilian demand. Military buying has been a iminishing factor for approximately two years. Defense equirements, which took almost 15 per cent of the ation's total production in 1953, are now taking only 11 per cent and are becoming steadily less important. lant investment, which three or four years ago was argely for defense production, is now almost excluively for civilian production.

Two years ago there were grave doubts as to how the conomy would stand the test of conversion with the nd of the Korean War and the government financed uild-up it entailed. The facts to provide an answer ow seem to be pretty well in. Record production and onsumption of civilian goods have been attained withut artificial stimulation from Washington. There have een no make-work projects of any kind. The governnent has followed a policy of allowing the economy o make its own adjustments with two principal exceptions. In the monetary field it has sought to keep money asy but not loose. In agriculture it has been compelled o maintain rigid price supports which have continued o pile up surpluses and prevented production adjustnents. The whole very satisfactory picture, however, s one the advocates of Keynesian economics, whose heories froze the country in a ten year depression in the 1930's, should study minutely.

Action Next?

President Eisenhower's Transportation Policy Committee has made its report. And it is a document of the highest and most immediate importance.

The recommendations are based on the work of an advisory committee consisting of a group of executives from non-transportation industries, and men from Columbia University and the Brookings Institution. The final report was prepared at the cabinet level, and participants included the Secretaries of Commerce, Defense and Agriculture, the Postmaster General, the Budget Director, and others.

Basically, the report recommends sweeping revisions of transportation regulation to permit carriers greater freedom to compete and to meet the present-day needs of the country. In making it public, Secretary of Commerce Weeks said, "Archaic regulations and practices are imposing large and unnecessary costs upon carriers, shippers, travelers and the ultimate consuming public." He added that the purposes of the proposed changes in regulatory practices are two-fold: "(1) to permit greater reliance on competitive forces in rate making and (2) to assure the maintenance of a modernized and financially strong system of common carrier transportation."

The report itself states: "Within the short span of one generation this country has witnessed a transportation revolution. . . . As late as 1920 the railroads held a virtual monopoly. . . . In striking contrast, there is available today a wide selection of transport methods." It observed further: "In many respects government policy at present prevents or severely limits, the most economical use of our transportation plant."

The report, in sum, wants the law to recognize the fact that today railroads, airlines, trucking systems, and inland waterways are all vigorously competing for business. Each carrier should be permitted to make the most of its advantages, without being hamstrung by regulations designed to control a monopoly which no longer exists, and thus give the public the best and most economical transportation service.

Tungsten And Taxes

The Chamber of Commerce of the United States has called attention to one of those seemingly innocuous little provisions frequently inserted in legislation for special interest groups which in the aggregate cost the taxpayer untold millions.

"In 1951," the chamber says, "under terms of the Defense Production Act, the United States government contracted to buy tungsten needed for mobilization from domestic miners. Last year, defense requirements (about 1.3 million short-tons) were met." It might be expected that the program has now been successfully completed and our tungsten problem has been licked.

Not so. One purpose of this and other such guarantees was to maintain a healthy domestic mining industry. Under terms of the 1951 guaranty, therefore, the Office of Defense Mobilization is committed to continue purchasing tungsten up to three million short-tons over the next three years.

This is not all. In 1951, the government agreed to pay $63 per unit — a good price compared with the prevailing world price at that time of $80. But market forces did not treat ODM purchase commitments kindly. The world price fell almost immediately and has hovered between $30 and $35 per unit ever since. The government, of course, continued to pay $63.

The result? The United States taxpayers will buy, in the next three years, over 1.5 million short-tons of tungsten they don't need at double the market price.

Alan Sturdy

Stock Yard Inn

The Steak is the Star of the Show

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The ritual of the bullfight is a work of art. Now a gustatory and aesthetic pleasure is yours to enjoy in The Matador. Continental cookery at its finest.

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Here...There... and Everywhere

• ***Good Year Ahead*** — On the basis of first quarter figures, the United States Savings and Loan League is predicting a record breaking year in 1955 for its members. Total home loan volume is expected to top $10 billion for the first time. The total last year was $8.3 billion. For the first quarter of 1955 the home loan volume was $2.3 billion, up 33 per cent from the like 1954 period.

• ***The Thermocon***—A low temperature distillation analysis apparatus which incorporates measurements of thermal conductivity for the identification of gases and volatile liquids has been developed by Podbielniak, Inc., 341 E. Ohio Street, Chicago.

• ***Domeliners*** — The Union Pacific Railroad has installed Astra Dome Double-deck dining cars. The line has ten of these cars, said to be the first to provide dining facilities in the dome. In all 35 Astra Dome cars are being added by the Union Pacific to its transcontinental streamliner trains. Costing about $10 million, the additions include coaches and observation cars.

• ***Self-sufficiency*** — The United States depends on the outside world for all of its tin, quartz crystal and industrial diamonds; 98 per cent of its mica; 95 per cent of its asbestos and chromite; and over 90 per cent of its nickel, manganese, mercury, cobalt and platinum according to the Paley Commission report.

• ***Mobile Homes*** — There are now more than 700,000 home trailers in the country, twice as many as ten years ago; and, like automobiles and trailer trucks, they're getting longer. The length of the average mobile home is now 35 feet as compared with 19 feet in 1939.

• ***Squeezing Through*** — Collapsible metal tubes for shaving cream, which had lost ground to other types of containers, are staging a comeback. The Collapsible Tube Manufacturers Council reports shipments of the fold-up tubes for this type of packaging are up about 70 per cent over a year ago.

• ***The Fastest-Growing Industry*** — In five years electronics will be a $15 billion industry and a $20 billion industry by 1964, Don G. Mitchell, chairman and president of Sylvania Electric Products, Inc., predicts. Currently sales and revenue of the industry are running at an annual rate of about $9 billion.

• ***1900-54 Price Trend***—The long-term trend of living costs in the United States, based on 1953 equalling 100, since the turn of the century has been as follows:

Year	Cost of Living Index	Net Change in Decade or Year
1900	30.6	+ 2%
1910	36.8	+ 20
1920	77.8	+111
1930	63.4	− 18
1940	55.4	− 13
1950	90.0	+ 62
1951	97.0	+ 8
1952	99.5	+ 2.6
1953	100.0	+ 0.5
1954	100.2	+ 0.2

Sources: U. S. Bureau of Labor Statistics; Fed'l Reserve Bank of N. Y.; Nat'l Industrial Conference Board.

• ***Dairy Products on Rise*** — For the first time since 1925 the per capita consumption of milk, butter and cheese all increased in the same year over the previous year. Butter consumption increased in 1954 to 9.0 pounds per person from 8.6 pounds in 1953, the lowest amount on record. Cheese consumption increased to 7.7 pounds per person, and fluid milk and cream to 352 pounds, according to the annual report to stockholders of Beatrice Foods Company.

• ***The Air Age and Business*** — Over 60,000 aircraft are flying a bil-

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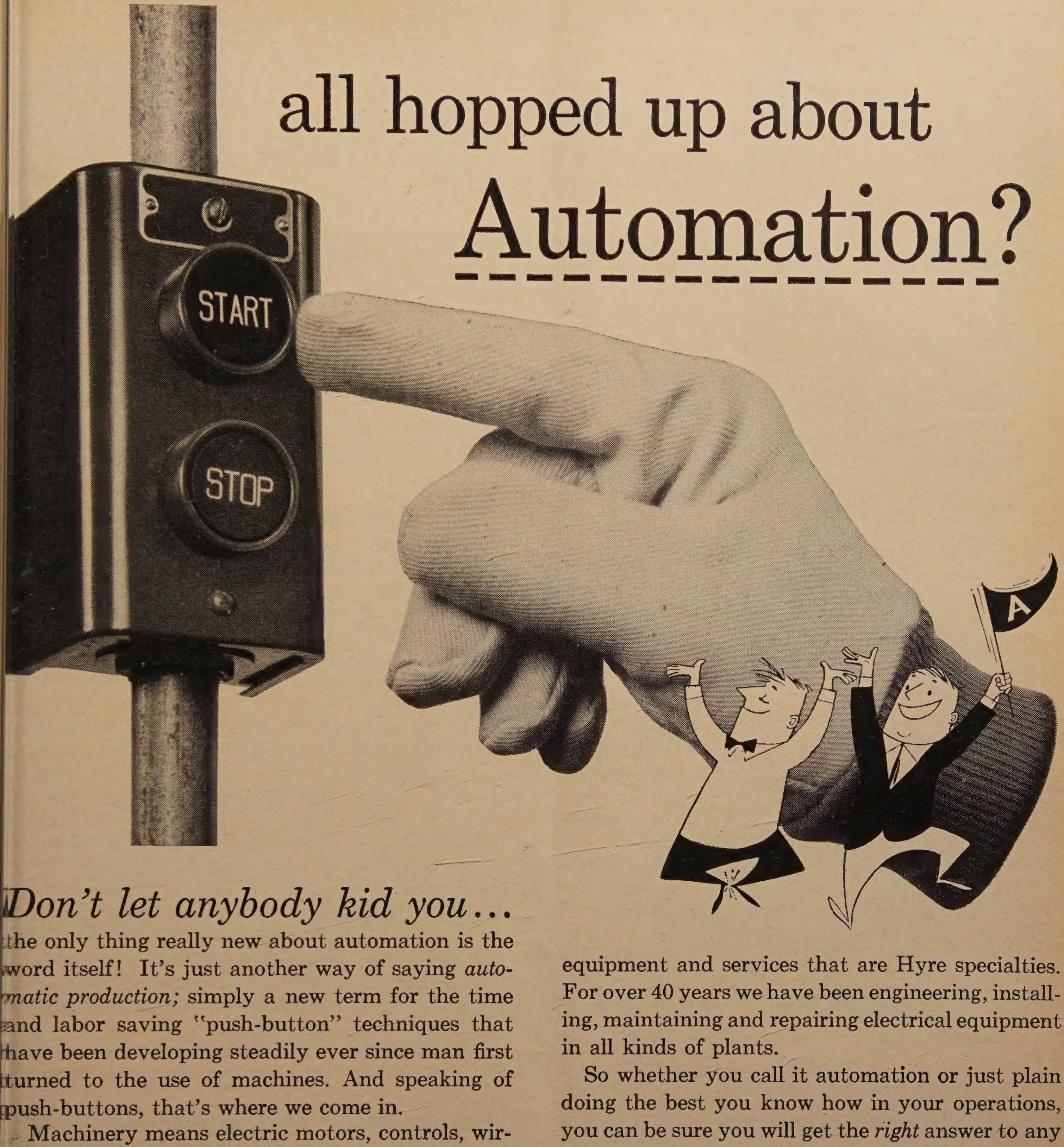

Don't let anybody kid you...
the only thing really new about automation is the word itself! It's just another way of saying *automatic production;* simply a new term for the time and labor saving "push-button" techniques that have been developing steadily ever since man first turned to the use of machines. And speaking of push-buttons, that's where we come in.

Machinery means electric motors, controls, wiring, lighting, maintenance and repairs—electrical equipment and services that are Hyre specialties. For over 40 years we have been engineering, installing, maintaining and repairing electrical equipment in all kinds of plants.

So whether you call it automation or just plain doing the best you know how in your operations, you can be sure you will get the *right* answer to any electrical problem from Hyre.

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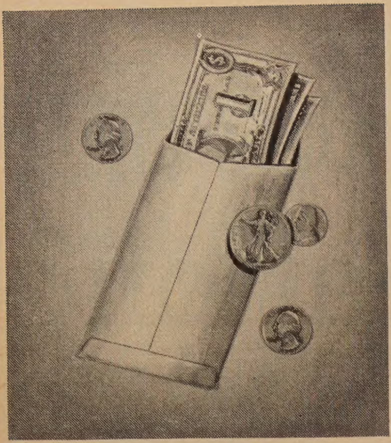

YOU CAN HELP YOUR EMPLOYEE INSURE HIS PAY AND INCREASE HIS SECURITY

Perhaps you feel that the number of persons you employ is too small to qualify for the pay envelope security of "Group" Disability insurance. Then why not explore with North American the possibility of a "small business" Franchise Plan?

These plans are designed for firms having five employees or more. Low in cost, they require very little activity on the part of the employer.

Franchise Accident & Health coverage also goes a long way toward promoting employee stability and better employee relations.

The coupon will bring full details . . . if you wish, a North American Service Man will phone for an appointment.

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ADDRESS________________
CITY________________
CONTACT MR.__________ AT__________
(PHONE)

Trends . . . in Finance and Business

• ***The Backdoor to GAW*** — A wage pact which provides for acceptance of a guaranteed employment plan in principle with the details to be worked out later has been negotiated in Philadelphia.

Participants in this unique labor agreement were the International Resistance Company, Philadelphia, Pennsylvania, and the CIO's International Union of Electrical, Radio and Machine Workers.

The pact also provides for International Resistance to establish an interest-bearing trust fund. The company is to pay nine cents an hour worked per employe into the fund during the period when the GAW plans are worked out. If no agreement is reached on a formula assuring 52 pay checks a year, then every worker in the shop will be paid nine cents an hour as a wage increase retroactive to April 1, 1955.

• ***Billionaires on the Decline*** — The New York Stock Exchange's "Billionaire Club" had a net loss of three members last year. Members are listed domestic companies with annual sales or revenues of $1 billion or more.

Although two new companies were admitted, five dropped out, reducing the membership to 26. The newcomers were Boeing Airplane Company with gross revenue of $1,033 million and Sinclair Oil Corporation with $1,021 million. The five who dropped out were International Harvester Company, Republic Steel Corporation, Pennsylvania Railroad, Firestone Tire and Rubber Company and Union Carbide & Carbon Corporation.

General Motors Corporation continued in first place with sales topping $9.8 billion. There was no change in the relative positions of ranking second, third and fourth place firms: Standard Oil (New Jersey), American Telephone and Telegraph and U. S. Steel Corporation.

Armour and Company which held ninth place in sales reported the lowest net profit of the 26 club members and was the only firm in the group not paying any common stock dividends. Its sales were $2,056 millions and net income was $2 million.

• ***Getting Better Pay***—Factory managers and superintendents earn almost $2,000 a year more, on the average, than their counterparts in the sales field, regional and district sales managers according to the American Management Association.

This comparison is the reverse of that usually found on the top management level. Previous AMA surveys have shown that company top sales executives are usually higher paid than top manufacturing executives. The average annual compensation of regional and district sales managers is $12,000, compared to $14,000 for factory managers and superintendents. The average age of men in these four positions is 45 years; average length of service in their present jobs is four years.

• ***The Crop Outlook*** — Despite government efforts to curtail output, crop production in 1955 is expected to approach the bumper harvests of recent years.

The Department of Agriculture has estimated that 59 principal crops planted or grown this year may total 353.5 million acres, only slightly below 1954. Plantings of 16 leading spring crops are placed at 285.5 million acres, 3.2 million above a year ago. Government restrictions are mostly responsible for reduced plantings of wheat, cotton, tobacco, rice, flaxseed, and sugar beets.

On the other hand, several million acres diverted from these crops are

(Continued on page 28)

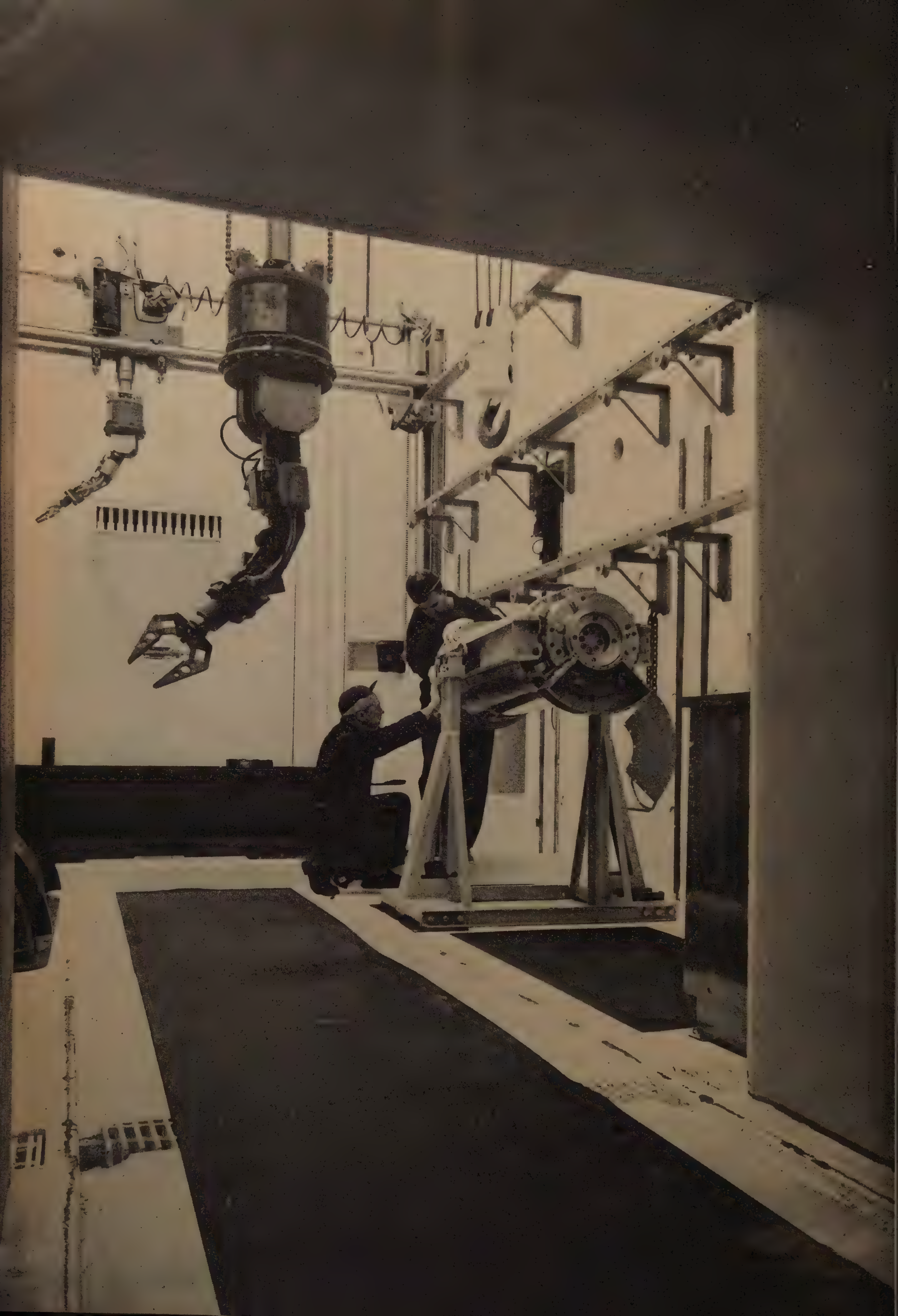
GAS at work for Chicago's Industry

Pouring molten magnesium into molds in the making of aircraft castings at the magnesium plant of the Howard Foundry Company, 4918 W. Bloomingdale Ave., Chicago, Ill.

Located on Chicago's northwest side, the Howard Foundry Company operates the largest magnesium jobbing foundry in the world. It is one of the prime suppliers of magnesium aircraft castings and many of the casting problems of U. S. aircraft and aircraft engine builders are brought to this Chicago plant for solution.

The castings produced by Howard are intricate and specifications are exacting. Gas plays an important role in the rigidly controlled melting for the manufacture of magnesium castings for a supersonic age. It is the only fuel used in the foundry for melting the metal and for baking the cores.

THE PEOPLES GAS LIGHT AND COKE COMPANY



The Atom's Impact On Investments

By GORDON R. MOLESWORTH

Even remote linking of a company with uranium atom causes a chain reaction in security prices

NOT all the nuclear chain reactions today are confined to atomic weapons or nuclear reactors. As many, if not more, reach "criticality" in the nation's stock exchanges, in over-the-counter markets and in the conference rooms of large financial institutions.

The uranium atom, in fact, seems these days to be particularly explosive whenever it is combined with a particular company's activities. Once this union becomes known – or is even rumored – a kind of human chain reaction occurs. The company's shares are apt to rise sharply. It can sell a new stock issue almost before it is registered; or if the company is not too large, its management can consider the several merger opportunities which will probably come its way.

A few random examples will illustrate this special kind of atomic power:

Bath Iron Works announced routinely a couple of months ago employment of a nuclear engineer. The company's stock promptly rose some 25 per cent, despite a statement by the firm that it had no atomic energy work and foresaw none in the near future. The step was simply routine for any progressive shipbuilder today, the president said. But the stock continued to rise sharply.

W. R. Grace & Co. was recently reported to have found a rich uranium ore body in Peru, and its stock promptly took a jump. The company just as promptly labeled the report a hoax, but the shares maintained their new high ground anyway.

Lithium Causes Rise

Revelation more than a year ago that lithium was an ingredient of thermonuclear weapons, started a steep rise in the shares of all companies producing that light metal, whether they had any contracts with the Atomic Energy Commission or not. The latest of this group to benefit from this "built-in" chain reaction is a small firm with the intriguing name of Basic Atomics, Inc. It is reported to have some lithium deposits in North Carolina near large mines being operated by several leaders in the lithium industry. Basic Atomics' stock has risen from 1¾ to more than 7 in the short space of a few weeks. This concern may prove to be an excellent investment; but if it does, such success will bear out the blind hopes rather than the sound analysis of many of its shareholders.

The stock of Consolidated Edison Company of New York jumped after its president told the Joint Congressional Committee on Atomic Energy the firm was going to build a large nuclear power plant. The stock price rose even though the plant will not be completed for several years and may not produce competitive power when it is. The stock of Babcock & Wilcox, the firm selected to design and build the power reactor for this first privately financed atomic plant, rose some 20 points in two weeks.

The Atomic Development Mutual Fund, a standard open-end investment company except that it invests only in the shares of companies engaged in atomic energy development, wound up its first year last December with more than $12 million of shares sold, an all-time record for new funds. In the next ten weeks, the public invested $6 million more in this medium. Now, with a $15 million underwriting virtually complete, the public has used the Fund to channel more than $35 million into atomic energy development.

Several progressive banking organi-

The author is president of Molesworth Associates; atomic energy consultant to Harris, Upham & Company. This article has been adapted from his speech delivered in San Francisco, April 5, 1955 at the Atomic Energy Commission Conference sponsored jointly by Stanford Research Institute and Atomic Industrial Forum, Inc.

← A "hot cell" with concrete walls seven feet thick. By remote control scientists can use the mechanical claw-like hands and safely handle radioactive materials and equipment
Westinghouse Electric Corporation photo

zations, recognizing the growing influence of atomic energy in business and industry, are preparing themselves for sound operations in this field. Chase National Bank recently employed Dr. Lawrence Hafstad, formerly director of the AEC's Division of Reactor Development, to counsel its management. Bankers Trust Company, also of New York, has engaged Nuclear Development Associates for technical counsel in the field of investments.

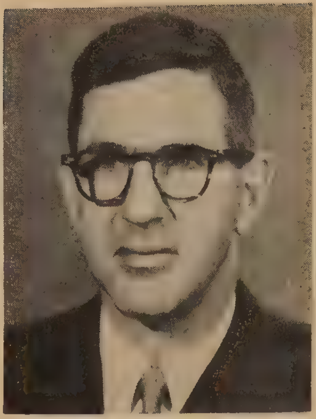
All these are examples of the impact atomic energy development is having in the field of finance.

The most widely known of the atom's financial influences is that exhibited in the stock market. The mention of atomic energy in the same breath with the name of a company is tantamount to making it "a sure thing" in the eyes of the public, often to the embarrassment of the company involved. The tremendous uranium stock rush is certainly indicative of this widespread confidence in anything atomic. Millions of Americans have bought shares in uranium and other atom-connected companies strictly on impulse with virtually no study at all and with no counsel from experienced advisers.

Some Prove Good Buy

However, not all stock investments made simply on the basis of a company's nuclear activity are bad. In many cases, they will prove to be decidedly good. For example, some ten months ago I selected for a Harris-Upham publication 25 stocks which I considered good media for investment in the atomic energy field. There were no unknowns, no "hot tips" in the list. Since that time this group has climbed 42 per cent while the Dow-Jones average has risen only 28 per cent. In other words, these stocks have risen 50 per cent more than the general market. Only one has declined. Several have more than doubled. Had an individual investor bought shares in these companies simply because he heard they were active in atomic energy, he would have made a good investment.

On the other hand, many investors who have blindly poured funds into "sure thing" uranium stocks during the last year, now have only worthless stock certificates to show for their money.


Gordon Molesworth

There have been, of course, some good investment opportunities in the uranium field and there will be more. But the lack of specific information and the unreliability of much of that which is available make selection extremely difficult. The delicate wording which many promoters have devised to stay within the law and still leave a glowing impression of great promise for their companies is a real object lesson in semantics. Many uranium companies have claims, always next to a well-known mine, but no proved uranium; or they have some uranium but the amount and grade is unknown. Many do in fact have substantial proven ore reserves but they are so heavily capitalized that no single share of stock will ever yield much return. When these are eliminated, few are left.

The trend is now toward consolidation of the more than 550 mines operating on the Colorado Plateau. More and more small companies either merge into groups or sell their interests to the half dozen or so large mining companies which have now moved into uranium mining on a permanent basis. Although the uranium rush is still on, there are signs of its settling down somewhat. And this is a good sign, for an unlimited boom, followed by widespread disillusionment, might retard the whole pattern of progress in the atomic field by making it more difficult in the future to finance really worthwhile enterprises. Of course, venture capital is a necessity for continued exploration and for development of ore reserves; but the element of speculation in most such investments should not be misrepresented. And therein lies the danger of wholesale uranium offerings and of broad-scale buying of such shares without careful evaluation.

Although the chances of profit in the so-called atomic energy stocks appear to be better than in many other categories, using a company's "radioactivity" as the sole investment guide is somewhat less than wise. Persons using this system frequently overlook three major considerations:

One, how prominent are the company's nuclear operations in its whole business picture? Although a company may accurately be reported active in some phase of nuclear energy, its interest may be limited to research and investigation. This may be a favorable indication but only for the long pull.

Two, is the atomic energy activity being carried on, actually a source of substantial profit, either present or potential? A company may have a respectable operation in this field but the atom may still be as invisible in the earnings statement as it is in free air. Best illustrations of this point are the many companies serving as major contractors for the AEC, yet whose income from such contracts is very nominal, usually less than they could earn by using the same management personnel in some other enterprise. Another example: considerable market play has been given during the last year to those firms producing uranium as a by-product of phosphate fertilizer operations in Florida and elsewhere, yet the processes so far developed for this purpose are not profitable.

Third Major Consideration

Three, has the atomic energy activity of the company already been discounted by increases in the price of the stock? The long and persistent rise in lithium shares, for example, has led many a careful investor to wonder whether he could ever come out ahead, despite a continuing hydrogen weapon program and expanding civilian uses for lithium. This evaluation actually depends partly upon the prospective term of the planned investment. An atomic energy stock may be overly discounted if one wants to chalk up profits in a year, while if one is planning a long-term investment and the field is generally promising, the stock may still be a good buy.

Investigation of these factors, either personally or through an investment adviser, will help point the way toward sound investments in the atomic age.

One of the great ramifications of

(Continued on page 30)

Testing an employe's hearing

By

W. H. BURHOP

A pure tone audiometer used in hearing tests

All's Far From Quiet On the Production Front

Deafening din still roars but worker's hearing is in less danger

INDUSTRIAL noise and its effect on hearing is no longer a subject merely for conversation and speculation. It's a real problem, immediate, urgent and, in many cases, baffling.

Some encouraging things are being done to meet this new challenge and while only the outer surface has been scratched, the long-range outlook is hopeful. Many businesses have made exhaustive studies into the whole problem of industrial noise. Much of what they have learned — and much that they have done — is applicable to industry of all kinds throughout the country.

The war on noise is being waged on three separate, but closely allied fronts: extensive noise level surveys in plants and factories; noise reduction programs that come as a result of these surveys; and pre-employment hearing measurements which are designed to conserve the hearing of the working population and to avoid the dangers of placing a noise-sensitive worker on a potentially ear-damaging job.

Locating and "measuring" the areas of intensive noise is the first step in an organized noise-abatement campaign. Medical science has provided answers to the question of how much noise the average human ear can take before its ability to function properly is periled. Accurate measuring devices used in making these surveys point out these critical areas and "earmark" the spots which are in the most urgent need of attention.

But locating the noise and discovering how damaging its intensity may be, is only the first factor in the

(Continued on page 22)

W. H. Burhop, the author, is president of Employers Mutuals of Wausau, Wausau, Wisconsin

Automation, The Next Logical Step In Production Evolution

AUTOMATION is one of today's most controversial subjects. Labor calls it a monster, an industrial demon that threatens to completely destroy the American way. Industry, rising lately to its own defense, says it will result in more and better jobs, products, and purchasing power. The man on the street is confused. And Industry has itself to thank for that.

Afraid of borrowing trouble, industry has been slow with its word on automation, far too slow. Now it is in the rather ridiculous position of having to defend a manufacturing technique that is not only logical but absolutely essential to the growth and well being of our country. Labor has argued that industry has shrugged its responsibility as Americans by allowing automation to grow. The only responsibility that industry has shrugged is that of communicating to the people what automation is and what its effects will be. This is the challenge of every segment of industry that is at all connected with the growth of automation: to use every means at its disposal to make evident to the American people what automation is, how it has come about, and what it will result in.

Automation naturally has its roots in today's manufacturing history. It is no revolutionary concept. It is rather a next logical step in a slow evolution. We have in our shops today examples of the various phases or steps through which we have progressed on our way to automation. There are four of these: job shop, the lowest volume, highest cost method of production; progressive line manufacturing, where machines are arranged according to the work that must be done on the product; conveyorized line manufacture, where conveyors are used to carry parts from one machine to the other; and finally automation, with its high degree of automatic handling and control. The roots of automation can be clearly traced through these four phases back to the beginning of manufacturing.

The job shop is undoubtedly the oldest method of manufacturing still in existence today. Parts are individually handled, individually machined, and assembled by hand. At the turn of the century, with few

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The author is vice president of Westinghouse Electric Corporation.

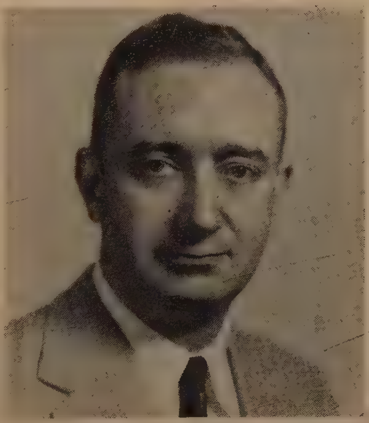
This "centipede" automatically conveys refrigerator components through several processing steps

This Westinghouse plant uses 51 separate conveyor systems stretching a total of 27 miles

But the big problem remains: how to bring it about more quickly

By

D. C. BURNHAM



D. C. Burnham

exceptions, this was the only method of manufacturing in existence for most industries.

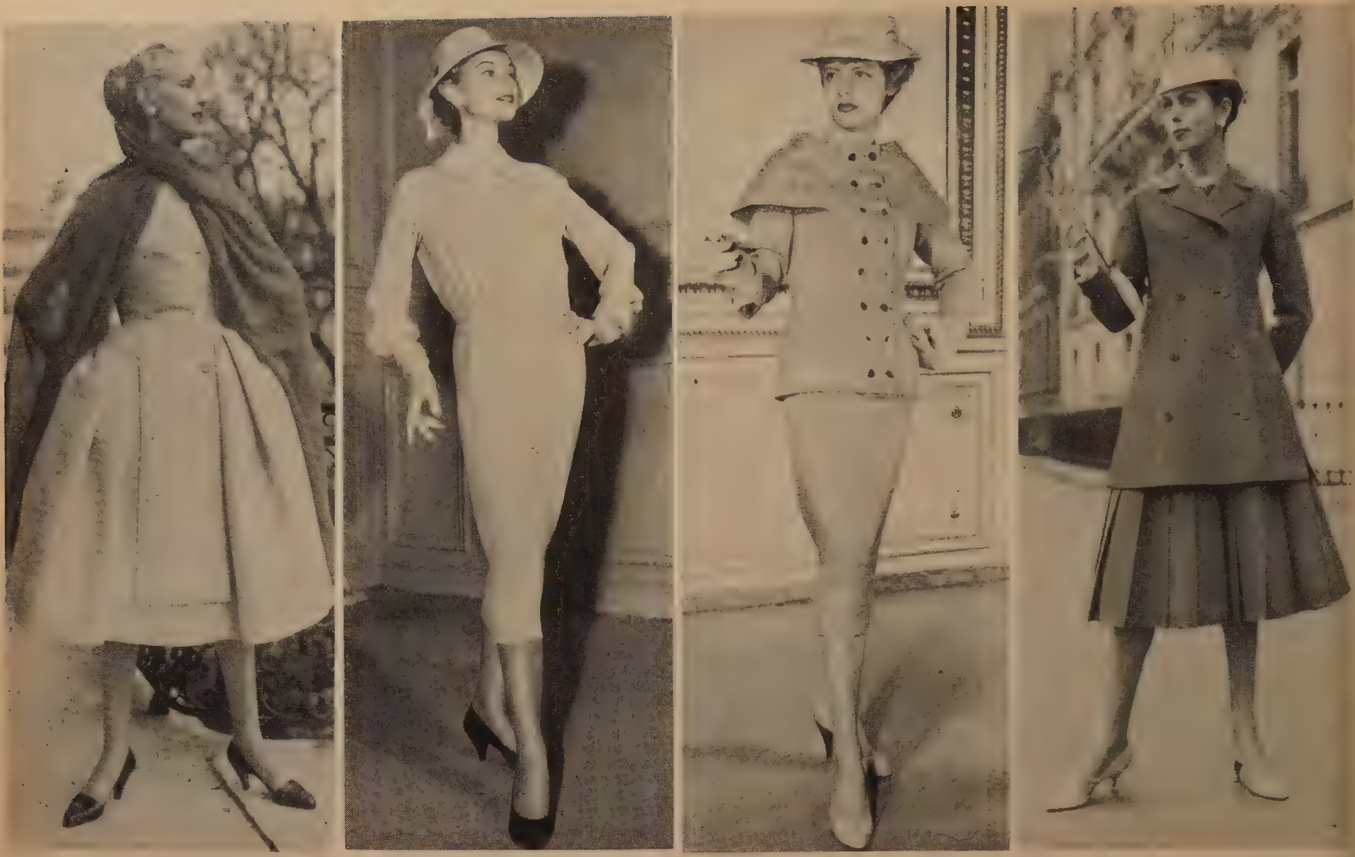
The automobile, which costs $3,000 today, would cost approximately $100,000 if it were manufactured by job shop methods at present labor rates! Obviously, the automotive industry would be very small if such were the case. Not only that, so would many supplier industries.

Faced with an expanding and an eager population, American industry had to find a way around the tremendous cost of hand labor. Someone conceived the idea of arranging the machines in his shop so that the part to be produced progressed in a straight line from machine to machine. This cut down on handling costs, boosted productivity. All this time, more efficient machine tools were being built, tools that not only saved the worker's back and his eyes but produced more parts per hour. The next step up the scale from straight line manufacturing was an inevitable as automation is today.

The assembly line or conveyorized method was to mark America as a nation unparalleled in producing high quality, low cost goods. Although Henry Ford was not the originator of the conveyorized method of manufacture, he can be credited as being its greatest scholar. Ford announced in 1909 that he would "build a motorcar for the great multitude" and that he proposed to do it by building 1,000 cars a day! What it did for America is written in almost every minute of present day living. The words "United States" and "mass production" were to become complementary. The techniques of mass production have fitted in so well with the young, ambitious, and democratic American way that it has not only made the United States the strongest nation in the world but has also played a major role in preserving the democracy that made mass production possible in the first place.

The step from conveyorized manufacture to what is called automation involves the use of more automatic machines and controls as well as

(Continued on page 37)



Which one will capture milady's fancy (left to right on both pages): the waistline by De Givenchy, the classic line by Fath, the

The World of High Fashion, Where

By LEWIS A. RILEY

FOR one pink-clouded day last August, the world's biggest business news came not from such familiar environs as New York, Chicago or London. On this day the big news effervesced from a stately, gray-walled salon on Paris' Avenue Montaigne where a stoutish, 50-year-old bachelor was in the exhilarating process of transforming feminine configurations throughout the western world.

As correspondents of every non-Communist news service looked on, Christian Dior, the grand emperor of high fashion, paraded forth his latest innovations in "haute couture" — a ritual calculated to send fashion writers to their typewriters with the sort of wide-eyed amazement that might befit a military correspondent describing the dropping of the first hydrogen bomb.

In America's fashion news, Couturier Dior's introduction of the "Newest Look" called for the biggest headlines since the same Frenchman sired the "New Look" in 1947. To America's 9,000-odd women's garment makers, the news brought heady thoughts of another fashion revolution which — in roughly the time it would require this nimble fraternity to copy the French originals — would leave existing female wardrobes not only obsolete but clearly unsalvageable.

Page One News

To editors across the nation—who, being predominately male, saw in the "Newest Look" a disturbing similarity to the sack-like styles of the Roaring Twenties — the Paris dispatches were, for better or worse, page one news. And they were news also to another ample segment of the population, the husbands of America who, generally speaking, regard the women's fashion industry as one of the world's more baffling enterprises, flighty, unpredictable and wholly ungovernable.

Even worse, these husbands are obliged to lend more or less uninterrupted financial support to the industry which has been described, perhaps not inaccurately, as "a riddle wrapped in mystery, inside an enigma."

To the average husband, it would come as no surprise whatever that M. Dior delights in telling friends that he conceives his trend-dictating garments while reposing creatively in his Paris bathtub. Or that he, himself, is personally amazed at the prices — ranging up to $2400 per gown — which his original designs now command.

Nothing, in fact, is very likely to surprise menfolk about an industry wherein one of the fundamental principles follows this unbusiness-like though profitable reasoning: in

I-line by Desses, the A-line by Dior, the straight line by Balenciaga, the flare by Schuberth or the middy line by De Givenchy?

Anything Can Happen and Does

Ideas dreamed in Paris bathtub influence sales more than value

ashion merchandising the intrinsic value of the product is vastly less important to selling price than the presence of what has been described as emotional appeal, high style or plain schmaltz. If your merchandise has this prized quality, it carries a higher price tag than competing merchandise that may be twice or three times as good in every other respect — save style.

Many Inconsistencies

That, however, is just one contradiction that must be understood before attempting to grasp the peculiar economics of fashion merchandising. It is, as any garment maker will confess, a very bewildering industry indeed. Consider, for example, these additional inconsistencies:

On the one hand, fashion merchandising is exceedingly big business. Last year, according to admittedly rough estimates of the Department of Commerce, American women spent just under $4 billion for fashion apparel. The figure is probably conservative, but it is one of the few authoritative financial estimates concerning an industry that guards its books every bit as jealously as it guards activities within its styling rooms.

Despite this cumulative size, the fashion industry is made up of a vast, unstable and highly splintered collection of small manufacturers, none of whom appears to entertain any real notion of becoming big by standards applying to most other industries. It is doubtful if any of the nation's 9,000 garment makers grosses as much as $25 million annually, and in New York's Seventh Avenue garment district, which represents some 70 per cent of the industry, an annual gross income of half a million dollars is regarded as a highly respectable volume.

Couturier Dior's Gross

Dior, himself, with a fashion empire that includes five New York corporations (marketing, in addition to dresses, such lucrative sidelines as hosiery, perfumes, furs and hats) plus licensed manufacturers in England, Chile, Cuba, Mexico, Canada and Australia, manages to put together an estimated annual gross of about $7 million. In practically any other industry, a manufacturer enjoying the publicity readily accorded M. Dior would probably feel it hardly worth going on if his an-

(Continued on page 34)

Push a button and insect repellent is applied to the skin and clothing

Pffft! and a new industry is launched

Pressure packed aerosol products flit to new heights in popularity

By JOHN L. KENT

PUSH a button on top of a small container and you can spray paint, kill flies or roaches, "set" your hair wave, or get shaving cream lather instantly.

Conveniences such as these have captured America's fancy and started a new industry, all within the last decade.

Motorists, for example, can now waterproof their auto ignition systems, at the push of a button, with a moisture-resistant insulating plastic.

And this is only one of the more than 50 household and 20 industrial products now packed under pressure in aerosols. Some of the recent additions include protective oils, dry cleaning fluids and a "new-car" odorizer.

The oil spray protects tools with a fine mist of oil. The dry cleaning fluid makes it possible to clean clothing, upholstery and rugs easily. All one does is push a button and wipe off the soiled spots. The odorizer imparts a "new-car" odor to used cars. It is being used by auto dealers as a final spray on upholstery and other interior surfaces after the car is vacuum cleaned. The odorizer preparation removes the stale odor which usually permeates an old car.

Dr. Fulton (right) explains protection needed when using this garden insecticide

But the most amazing part of these "push-a-button" products has been the growth of their popularity. Ten years ago they were non-existent. This year the industry expects to sell over 200 million of these pressurized preparations.

Competition and availability of new materials have stimulated the development of new formulations, methods of use, and packaging of aerosols. The cost of the container and valve has been cut from 80 cents to 15 cents. The cost of filling has been cut by adopting regular type can sealing machinery. A single "line" unit can now fill, test, and package 40,000 cans a day.

An aerosol consists of a solution of an active ingredient and propellant in a closed container equipped with a valve and standpipe. Part of the propellant, loaded under refrigeration as a liquefied gas, remains in solution, but the

(Continued on page 26)

The Amazing Powder that Serves Us All...

One of the everyday bits of magic that we often take for granted is the mixture of portland cement, gravel or other aggregates, sand and water which hardens into concrete of tremendous durability and strength and resists storms, fire, termites, rats and decay. In making this versatile product, more than 80 operations are required. It takes over 150 pounds of raw materials to make one sack of portland cement weighing 94 pounds. Every step is protected by scientific tests to insure quality. Portland cement and concrete have a wide variety of uses and contribute greatly to the health, safety and welfare of every American.

Improving portland cement and concrete and reducing the cost of construction for ever-better highways, homes, schools, hospitals, factories, apartments and farm improvements is the job to which the activities of the Portland Cement Association are dedicated. P.C.A. gives leadership to the industry's research, education, technical service and safety work.*

* All PCA activities are made possible by the voluntary financial support of its 68 member companies who make a large proportion of the portland cement used in the U. S. and Canada. List sent free on request.

PORTLAND CEMENT ASSOCIATION
111 West Washington Street, Chicago 2, Ill.
A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

All's Far From Quiet

(Continued from page 15)

equation for noise abatement. Once it's been located, something has to be done about it. And industry has come up with some remarkable innovations in recent months. Sometimes, unlooked for rewards develop out of what was originally decided upon as a solution to a noise problem.

For example, a large midwestern manufacturer was looking for a way to cut down on the noise created by riveting operations. He solved the problem in the most effective manner possible. He eliminated riveting by substituting a process for locking piece parts together with a special lock-bolt and collar. That stopped the noise all right. And a lot of unexpected improvements came out of this operational change:

The time spent on the operation was cut from 25 minutes to five; where two employes had been needed, one was now able to do the job; maintenance costs on tooling were halved and a serious eye hazard involved in the riveting process was eliminated.

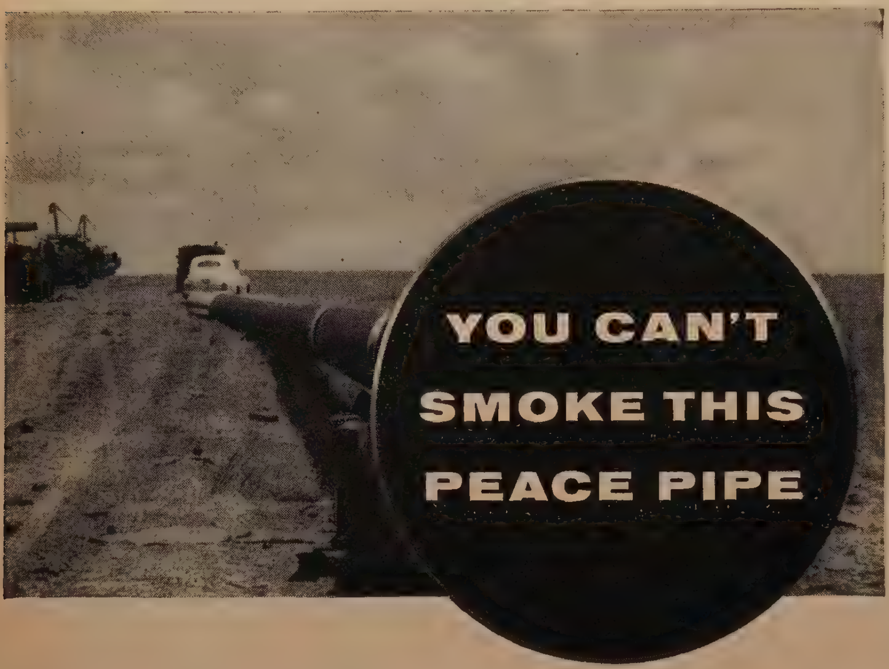
Common sense is one of the key ingredients plant managers must employ in seeking ways to reduce noise. Of course every problem doesn't have a simple solution, but it is surprising how much has been done by looking for the obvious. A noisy brake press operation is a classic example. The source of this excessive noise was discovered at the back of the squaring shear. It originated when fairly large pieces of sheet metal were cut off and fell a distance of several feet to the floor. The din was deafening; the solution, simple. A heavy framework was built to a height just below the material being cut. Result: the pieces of metal dropped only a few inches; and compared to the previous din, they fall in near silence.

Common Antidote

One of the commonest and most successful antidotes for factory noise is eliminating, or reducing noise at the place where it occurs. A new type of slotted cutting blade solved a serious noise problem in a woodworking plant; another manufacturer successfully experimented with a muffler for air exhaust on punch presses and screw machines and another plant has come up with a new welding technique on steel sash to eliminate the necessity of chipping welds.

Another very simple and effective thing that any plant can do to reduce noise at its source, is embark on a complete "tightening down" program. This means tightening loose belts and guards, checking all fans and making sure heavy machines are properly bolted to the floor.

Another way noise has been defeated is through substitution. This involves looking at a noisy operation and asking: "Isn't there some other way that won't be so loud?" The manufacturer who switched from a riveting to a locking process proved the dramatic results such innovations can have. Not all of them are this sensational, of course. One plant achieved results by replacing a grinding operation with a nibbling process. Another replaced straight air nozzles with ones designed for quieter operation and



...But it's a peace pipe all the same. It's the recently completed twenty-inch Sour Lake-Lake Charles pipeline of Cities Service...another addition to the vast, steadily growing network of Cities Service pipelines.

These pipelines stand ready to serve all America's needs, especially in time of danger...ready to speed millions of barrels of petroleum across the land wherever needed.

It is just one small example of the dynamic growth of one of America's largest oil companies. Cities Service invested over $60,000,000 in the never-ending search for and production of oil during 1954...refinery facilities were modernized and expanded at East Chicago and Lake Charles to make possible even better high-grade petroleum products...and four new supertankers were completed, bringing to 27 the total of Cities Service ocean-going vessels.

These are but a few of many improvements and enlargements in Cities Service operations...some competitive, some for cooperation with the entire industry and the government. They clearly reflect the progress that can be made in a business society whose members know that competition and cooperation are not incompatible.

CITIES SERVICE
QUALITY PETROLEUM PRODUCTS

cut the noise level ten per cent — enough to bring it out of the danger zone. Rubber tires have been installed on brake carts; steel gears have been replaced with fiber gears; and metal buckets have been replaced by ones made of wood.

Fighting noise by the substitution method can be done with a modest capital expenditure. Often, the only investment that's needed is imagination.

Noise can be avoided by isolation; that is, taking the noise away from the workers or the workers away from the noise. A foundry, in examining a noise problem originating in its core knock-out operations, hit on a solution that was so obvious it could easily have been overlooked. It changed the time of the operation to after-shift hours, thus eliminating the exposure for nearly all their employes.

Other plants have completely isolated noisy operations: tumbling barrels, belling and flanging operation, pneumatic tool testing, milling machines, an entire punch press department, motor testing, grinding, buffing and polishing operations and air nozzle grinding. In some instances, the isolation has been accomplished by moving to separate buildings; in others it has been done by enclosing necessary, but noisy, production jobs in soundproof rooms.

Proper Mounting

Noise reduction can also be accomplished by mounting machines properly. One manufacturer removed a large section of concrete floor and mounted one of his largest —and noisiest—presses on a separate floor base with good results. The use of resilient mountings has proved beneficial for most kinds of vibration-producing equipment.

Installation of so-called "floating floors" in which the floor is separated from the walls has met with remarkable success. Such extreme measures, however, are expensive—prohibitively so in many cases. But it is a technique which manufacturers should keep in mind when they are planning new plants, since the cost in original construction is usually very little more than for conventional-type flooring.

There is an ultimate solution to almost every noise problem in industry, but some of the answers may

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take months to work out and may involve major changes in production techniques. In the meantime, this is where the ear plug comes in handy. This device is the quickest and most effective means yet developed for conserving the hearing of workers exposed to unusually noisy situations. But it should always be looked upon as what it really is—a temporary solution. The racket is still there and will be until a final solution can be found.

While one group of engineers has been busy hunting for the critical noise spots in industrial plants and another group has been hard at work seeking ways to stop these ear-damaging sounds, a third group of specialists has been concerning itself with the more personal problem of the conservation of workers' hearing. This is the third front in the war on noise and — in some ways — the most dramatic.

The aim is to avoid placing workers who already have a loss of hearing or are unusually susceptible to noise, on jobs where noise could have further damaging effects. This requires setting up pre-employment hearing measurements as a regular step in the physical examinations that new employes are required to take. A number of large companies have installed the necessary equipment for these hearing measurements and have trained the plant nurse or some other responsible person to administer examinations.

But what of the small plants, the ones with a hundred employes or less who may hire only a few persons each month? The purchase of testing equipment and perhaps the necessity of hiring a nurse to operate it would put the hearing test program out of the reach of many of them. In a number of localities, this question has been met by establishing community-wide examining programs.

A year ago, Employers Mutuals was active in setting up the nation's first community program in its home town of Wausau, Wisconsin. Each participating employer in the city was assessed a fee of 20 cents for each employe to provide working capital for the program and to purchase necessary equipment. The Visiting Nurses Association agreed to administer the tests. Later a fee of two dollars per examination was established, so that now each employer in Wausau pays only for the services he uses.

Since the hearing program began, more than 22 per cent of the new employes who have been examined showed some kind of hearing loss! If these figures are at all indicative of the national situation, the country has a hearing problem of sizeable magnitude on its hands. The surprising part of these statistics was the fact that a large majority of those who had hearing losses were completely unaware of the fact. But once they knew it, they were quick to do something about it. Records at the hearing center indicate that a great majority of those who were advised to consult an ear doctor have done so.

Protecting Prospects

The Wausau program also has made contributions toward keeping prospective employes with extra-sensitive hearing away from unusually noisy jobs. A local foundry was interviewing an applicant for a job in the grinding department. He looked like a good bet. His background was right. He had the skills the job demanded and was ready to go to work right away. Then the hearing report came back — "is unusually sensitive to certain specific levels of noise," it read. A check revealed that the noise level in the grinding room was in this man's "danger zone." Further questioning brought out that he had previous experience as a truck driver. The foundry was in a position to use another driver and he was offered this job which, for him at least, would

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not further injure his hearing. He took it.

What's his reaction? He's happier and more contented than he has been for a long time; and more important, his hearing is no longer impaired since he is no longer exposed to severe noise.

The inability to hear properly also can pose a serious safety problem. Oftentimes, only a pre-employment examination can spot troubles of this kind and head them off before an accident or injury has a chance to happen. A construction firm was looking for a blasting specialist and thought they had found their man until the report from the testing station indicated the prospect had already suffered a serious loss of hearing. There was a good possibility he might not hear the "all clear" signal before a blast was discharged. He had been doing this kind of work for years without a mishap but the employer was unwilling to take any further risk. The applicant was also unwilling when he learned of his condition. Fortunately, he had other skills the contractor was able to use. However without the benefit of this hearing examination a serious tragedy could have taken place.

Adopted By Others

The success of the Wausau community industrial ear-check program has led a number of other Wisconsin cities to adopt similar projects. Programs are now active in LaCrosse, Waukesha, Appleton and Eau Claire. Inquiries about the program have been received from as far away as California, indicating the wide interest that this unique approach to the problem has attracted.

Much more remains to be done, of course. Industrial noise probably will be a major pre-occupation with safety and industrial engineers for several years to come. But what some individual companies and communities are doing to solve their problems, stands as positive proof that a final solution can be reached. It's going to take a lot of patience and hard work; and in some cases a good deal of money. But the answers have to be there if we keep digging hard enough to find them.

The important development is that industry is waking up to the noise problem. Its stake in finding the answers is tremendous.

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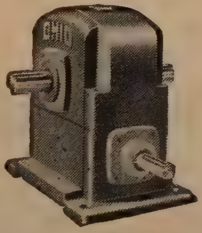

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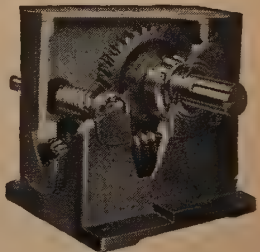

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Pffft! New Industry Launched

(Continued from page 20)

rest, in gaseous form, fills the head space of the container.

When the valve is opened, the vapor pressure of the propellant in the upper part of the can pushes the solution of propellant and active ingredient up the standpipe, through the valve and out of the discharge nozzle.

Upon release, the dissolved propellant instantly becomes a gas and shatters the active ingredient into very fine particles which remain in suspension for prolonged periods.

Two Types

The other two types of aerosols — surfasols (surface-coating sprays) and foams — work very much like space sprays.

Surfasols use less propellant and the system operates at lower pressure. Also, the active ingredients may be suspended in the formula rather than dissolved. Paint is an example. The material being dispensed is of much larger particle size than that of a space spray and can be directed at the object to be coated.

Foam products require even less propellant. Pressure depends more upon the vapor pressure of the propellant gas used rather than on the quantity of propellant. As the emulsion comes out of the nozzle, the propellant particles in the emulsio expand rapidly, turning the formulation (such as shampoo or shaving formulation) into a lather o minute bubbles.

The valve is the heart of the aerosol and valve tolerances are extremely close. The valves are mass-produced, precision pieces. The valv hole, for example, has to be punctured to a tolerance of four-thousandths of an inch. Most commercia aerosols operate at pressures o about 25 to 35 pounds per square inch. The propellants themselve vary in compatibility with differen active ingredients in aerosol formulations.

The cans are filled in two different ways — under pressure or "cold."

Pressure filling, as the name implies, involves filling with pressurized equipment at room temperature. The air is first evacuated fron the can and the product forced int it.

Under "cold filling" procedure refrigeration equipment cools th propellant so that it can be handle as a liquid.

Two years ago manufacturers began to experiment with glass aeroso containers. These containers are expected to revolutionize the whol outlook of the aerosol container industry. One market specialist predicts that these glass containers wil

Pressure filling of a room deodorant aerosol product at the Tru-Pine Company, 7644 Vincennes Avenue, Chicago, Illinois ach a production level of 50 mil- on units for personal deodorants one within the next year or two.

The greatest advantage offered by ese glass containers is the variety attractive shapes into which they n be fabricated. Perfumers and smetic manufacturers are especial- interested in this feature. Next lvantage is the ability to see the oduct within the bottle. Lastly, rrosion difficulties experienced ith some products will be elimi- ated since glass is an inert material.

Glass No Problem

The glass container does not pre- nt any problem in pressurizing. cording to Francis A. Mina of onite Products, pressures as low as to 15 pounds per square inch are ow feasible in glass containers. As added precaution, the glass can bonded or encased with plastic to ake the container relatively ex- osion-proof.

The man chiefly responsible for tting aerosols into mass produc- on and within reach of the aver- e user is U.S. Department of griculture's top expert, Dr. Robert Fulton.

Dr. Fulton followed up the work of earlier government researchers and helped put over the low-pressure "beer-can" type aerosol. The basic aerosol patents are held by the government. But free use is available to anyone who wants to go into the aerosol business.

Before a reputable maker puts an aerosol on the market he tests it for pressure, flammability, spray characteristics with different valves, and for general efficiency in the use for which the product is intended.

In this work the prospective aerosol "loader" can get much help from Dr. Fulton and his laboratory assistants.

Here's how the prospective aerosol maker can operate under USDA patents. An application is taken and if the proposed user agrees to conform to the rules, he is granted a non-exclusive license.

When the businessman is ready to get approval of his formulation, can and valve, he finds Fulton and his men most cooperative. Tests are run on components, and deficiencies, if any, are pointed out. In fact, Fulton and his men test every new type of insecticide to be used in aerosols.

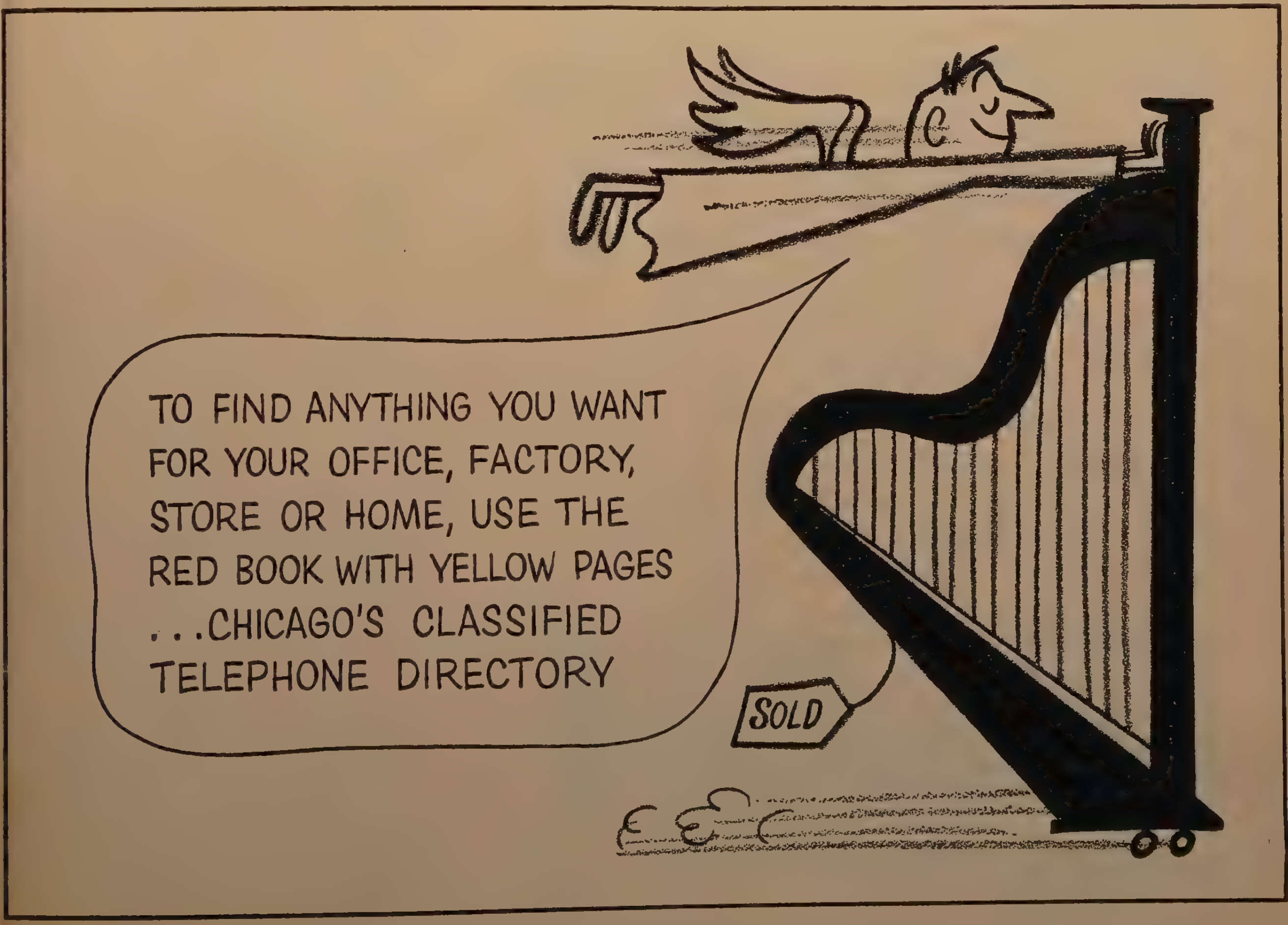
Dr. Fulton and the aerosol manufacturers feel the merchandising of push-button products has just started. Popularity of aerosol-type packaging against conventional sprays is evident from a recent consumer market survey made by the kinetic chemicals division of E. I. du Pont de Nemours & Company.

Use Increasing

More than 80 per cent of the housewives questioned in a nationwide survey said they had purchased an aerosol product and liked its ease of application and effectiveness. In 1951, only 57 per cent of people polled in a survey said they had used aerosols.

Insecticide type aerosols were the most popular among housewives. Of 48 per cent buying insecticides, the aerosol-dispensed product was preferred by a better than six-to-one margin over the second choice of dispensing-liquid spray guns.

Thus, in the latest version of the man with the better mouse trap, the customer is beating a path to the door of the aerosol manufacturer.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Trends In Finance and Busines

(Continued from page 10)

being planted to soybeans and fee crops, including restricted corn. Lik last year, many farmers, who fee nearly all the corn they produce an are not concerned with price suppor on that crop are expected to over plant corn acreage allotments.

Drouth and dust storms hav plagued some wheat areas. As a result the Department of Agricultur cut its forecast of the winter whea crop to 662 million bushels, down 1 million from its previous estimate Cold weather has caused considerable damage to fruits and vegetable in the Southeast. But with mechanization and other modern farm technology available to offset advers weather, it would take a majo drouth or flood to dampen seriousl current prospects for another over-al bountiful crop harvest.

Here, There and Everywhere

(Continued from page 8)

lion miles a year in business transportation, agricultural flying, patrol survey, charter, and other busines and industrial flying operations according to Secretary of Commerce Sinclair Weeks.

• ***Two Times Fore*** — More tha twice as many golf courses wer opened for play in the United State in 1954 than in the previous year the National Golf Foundation reports. The 126 courses opening las year compared with 52 openings i 1953. Golf courses under construction as of December 31, 1954, totale 259; an increase of 137 per cent ove the 109 courses under constructio at the end of 1953. Courses in th planning stage increased from 225 t 378, or 68 per cent, in the sam period.

• ***Unemployment Compensation*** Of the 51 states and territories wit unemployment insurance program 28 provide maximum unemploymen benefits, excluding dependents' allowances, of at least $30.

• ***The Beef Supply*** — There wer eight per cent more cattle and calve on feed January 1, 1955, than on tha same date a year ago according t the National Live Stock and Mea Board. The beef cattle in this country now total 58,413,000.

Industrial Developments

. . . in the Chicago Area

INVESTMENTS in industrial plants in the Chicago area totaled $16,262,000 in May compared with $14,384,000 in May, 1954. Total investments for the first five months of 1955 were $89,900,000 compared with $98,615,000 for the same period in 1954. These figures include expenditures for the construction of new industrial plants, expansions of existing buildings and the acquisition of land or buildings for industrial purposes.

• ***Wabash Fibre Box Company*** of Terre Haute, Ind., has broken ground for a new plant on a seven acre site at the northeast corner of 62nd street and New England avenue. This will be the first branch plant of the company and will contain 125,000 square feet of floor area.

• ***Chain Belt Company,*** Milwaukee, Wis., is erecting a factory building for its Shafer Bearing Divsion at the northwest corner of Belmont avenue and the Burlington railroad near Downers Grove. The building will contain 100,000 square feet of floor area and will be devoted to the production of the division's line of roller bearings. Thompson-Starrett Company, general contractor.

• ***Automatic Electric Company*** has purchased the Westward Ho Golf Course in Northlake, Ill., which contains approximately 170 acres. The land was purchased for a plant site but for the present will be operated as a golf course. The company manufactures electrical equipment and telephone devices.

• ***Prex Forgings, Inc.,*** 1808 W. Berenice avenue, is erecting a plant at the northeast corner of Belmont avenue and Wolf road in Leyden Township. The plant will have a total of 87,000 square feet of floor area and will consist of four buildings, including a high bay forging shop; a large airconditioned tool, die and heat treating shop; an airconditioned office, engineering and laboratory building; and a plant cafeteria. All buildings will be of brick, concrete and steel construction. The plant is designed to produce aluminum no-draft forgings for the aircraft industry as well as dies.

• ***Butler Brothers,*** general line wholesaler located at Randolph and Canal streets, is erecting a large warehouse of 415,000 square feet of floor area, and an additional 50,000 square feet for office space, at Oakton street and Wolf road in Des Plaines.

• ***N. Shure Company,*** 200 W. Adams street, is erecting a warehouse of 200,000 square feet of floor area at 500 N. Pulaski road. The structure will be devoted to the company's extensive lines of novelties, gifts and artwares. A. Epstein and Sons, Engineer; Poirot Construction Co., general contractor.

• ***A. G. Spalding & Brothers,*** 180 N. Wabash avenue, is erecting a 50,000 square foot office and warehouse on a 10-acre site at the southwest corner of Harlem avenue and Ainslie street in Harwood Heights. The company manufactures sporting goods.

• ***Litner Equipment Company*** is erecting a building in Franklin Park at 2551 Rose street. The company is now at 2326 S. Canal street and is engaged in the production of food service equipment. The new plant will contain 65,000 square feet of floor area on three acres of land.

• ***Makray Manufacturing Co.,*** 1419 West Diversey Ave., is erecting a building on three acres of land, lo-

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cated at 4400 N. Harlem avenue, Norridge, which will contain 60,000 square feet of floor area.

• ***Richards Wilcox Manufacturing*** Company will erect an addition of 36,000 square feet to its plant in Aurora, where the firm manufactures conveyors, cranes, general hardware and material handling equipment. Johnson and Johnson, engineer; Campbell Lourie Lautermilch, general contractor.

• ***Ready Foods Provision Company***, 3708 S. Ashland avenue, is erecting a plant which will house its entire operations when completed. The factory will be located at 47th Street and Pulaski road and will contain 70,000 square feet of floor area. Edward S. Busche, architect.

• ***American Can Company*** is starting to erect a new machine shop on Dugdale road at the North Shore Railroad, Waukegan. The new one-story structure will contain 20,000 square feet of floor area and will replace the present machine shop which was recently sold to Abbott Laboratories. Sherman Olson Inc., general contractor.

• ***Libby, McNeill & Libby*** is erecting an addition to its plant in Blue Island which will contain 87,000 square feet of floor area. The new structure will be utilized for warehouse space. W. Fred Dolke, architect.

• ***Oscar C. Rixson Company***, 9100 West Belmont avenue, Franklin Park, is erecting an addition to its plant which will contain 10,000 square feet of floor area. The company makes building hardware specialties. Olsen & Urbain, architect.

• ***Fiddes-Moore and Company***, Hammond, processor of imported Balusa wood paneling, is erecting a warehouse in Franklin Park on Mannheim road.

Atom's Impact On Investments

(Continued from page 14)

atomic energy development in the realm of finance is the opening of a wide new frontier for growth-type investments. For the investor who seeks capital gains rather than dividends, there is no greater area of opportunity than the companies which have a solid position in "the big three" — atomics, electronics and automation.

At the same time, however, selection of these leaders of tomorrow is extremely difficult. This is especially so in the nuclear field. For example, secrecy surrounding uranium production figures certainly adds to the difficulty experienced in judging the true value of uranium mining shares. Classification of so much information in the power reactor field also clouds the view of any financial analyst trying to chart the future of this phase of the atomic industry and the impact of this progress on the financial world. Even the terms of this new technology are confusing to the atomically uninitiated, as witness the recent publication of a Wall Street brokerage house extolling the virtues of the new radioactive "feed materials" and how they were going to boost farm animal production.

The prescription here, as in all other fields of investment, is a sound analysis of all information which can be obtained, with the analysis performed by an expert, if possible.

Many investors have responded to the financial opportunities accompanying nuclear progress, by putting their savings in a mutual fund of the growth type. This gives them a diversified investment across the atomic energy or related fields, with the selection performed by persons especially qualified for the task.

Atomic energy development is posing another problem for the investor. That problem is this: New developments in this field may have unfavorable effects upon stock or other investments already held.

In the past, this factor has been somewhat overemphasized and often interpreted erroneously. For example, Harris-Upham customers are constantly asking if they shouldn't sell their oil or their coal stocks because of the prospect of nuclear power. Of course, the answer here is always negative, since 20 years from now we will probably need three times as much conventional fuel for power generation as we use today, despite the expected rapid growth of nuclear power facilities during that period.

There are now, however, and there will probably be many more situations in which atomic energy development threatens to outmode the products or processes upon which a business enterprise depends. For example, plastics, strengthened and made more heat resistant by irradiation, may replace other materials in many familiar products. Manufacturers of such products who cannot shift to the better, cheaper materials will be "out in the cold." Although

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few companies will actually be put out of business by nuclear progress, many will be affected adversely, especially if they do not move aggressively to adopt whatever nuclear technology is applicable to their particular industry. The investor and the banker, for this reason, should put a premium on aggressive management that will keep abreast of developments in this dynamic field.

The same opportunities and the same problems which face the individual investor also confront the institutional investors, the banks, the insurance companies, the investment trusts and others.

Many companies active in the atomic field are continually seeking financing, either to initiate operations, to increase working capital or to expand their activities. As in other growth industries of the past, many of these companies will chalk up really remarkable capital gains over the next decade or so. But just as certainly, many will fall by the wayside. Here again, sound judgment requires that the glamour of the atom be stripped away and a cold analysis made, an analysis well nigh impossible for one not familiar with this specialized field.

This is why banks, mutual funds and other investing organizations are retaining atomic energy consultants. Their background is often essential to proper evaluation of a particular investment opportunity in the nuclear field. Banks also are using such counsel in their commercial loan departments.

Institutional Investor

The role of the institutional investor is rapidly becoming more important in atomic energy development. The next ten years will see him assume a key position. In fact, our progress during and beyond that period may very well depend upon him. This is due primarily to the large capital investment required for construction of the key machines of the Atomic Age, the nuclear reactors, and associated equipment.

The enormity of financial resources required for atomic power development is shown by these figures: Electric power capacity in this country is about 100 million kilowatts. It is expected to double by 1965 and double again by 1975. That means that by 1975, American power-producing capacity will be in the neighborhood of 400 million kilowatts. Sound estimates have placed atomic power's share of that capacity at 25 per cent, or 100 million kilowatts. Using a capital cost of $200 per kilowatt, we see that financing of that amount of nuclear power facilities will require 20 billion dollars.

The great bulk of these funds will be required by electric utility firms, and will be needed in large blocks of perhaps $50 million each. Being in a regulated industry, utility companies will not be able to promise investors or underwriters large returns on these investments, even when nuclear plants can turn out power more cheaply than conventional generating stations.

This $20 billion figure ignores completely the capital demands inherent in the tremendous future virtually assured for "package" power reactors and for shipboard nuclear propulsion systems — to say nothing of reactors for locomotives and aircraft, both of which we should see in substantial numbers by 1975. The total financing required for all these reactors during the next 20 years will probably approach the

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sum necessary for major nuclear power plants. With that assumption, our prospective capital demand goes up to $40 billion.

Beyond that, we have as yet allowed nothing for domestic financing of power reactors and other nuclear facilities for the foreign market. The opportunities abroad will be huge and I, for one, hope that U. S. industry's share of that market will be preponderant. If it is, even more capital will be required and some of it quite soon.

It is entirely possible that atomic energy facilities other than reactors — such as radiation laboratories, chemical processing installations and fuel fabrication plants — will involve capital investments bulking nearly as large as those in the nuclear reactor field. The amounts of capital required for projects generally will be smaller and a large proportion of such expenditures likely will be financed internally, but the capital demand will be there.

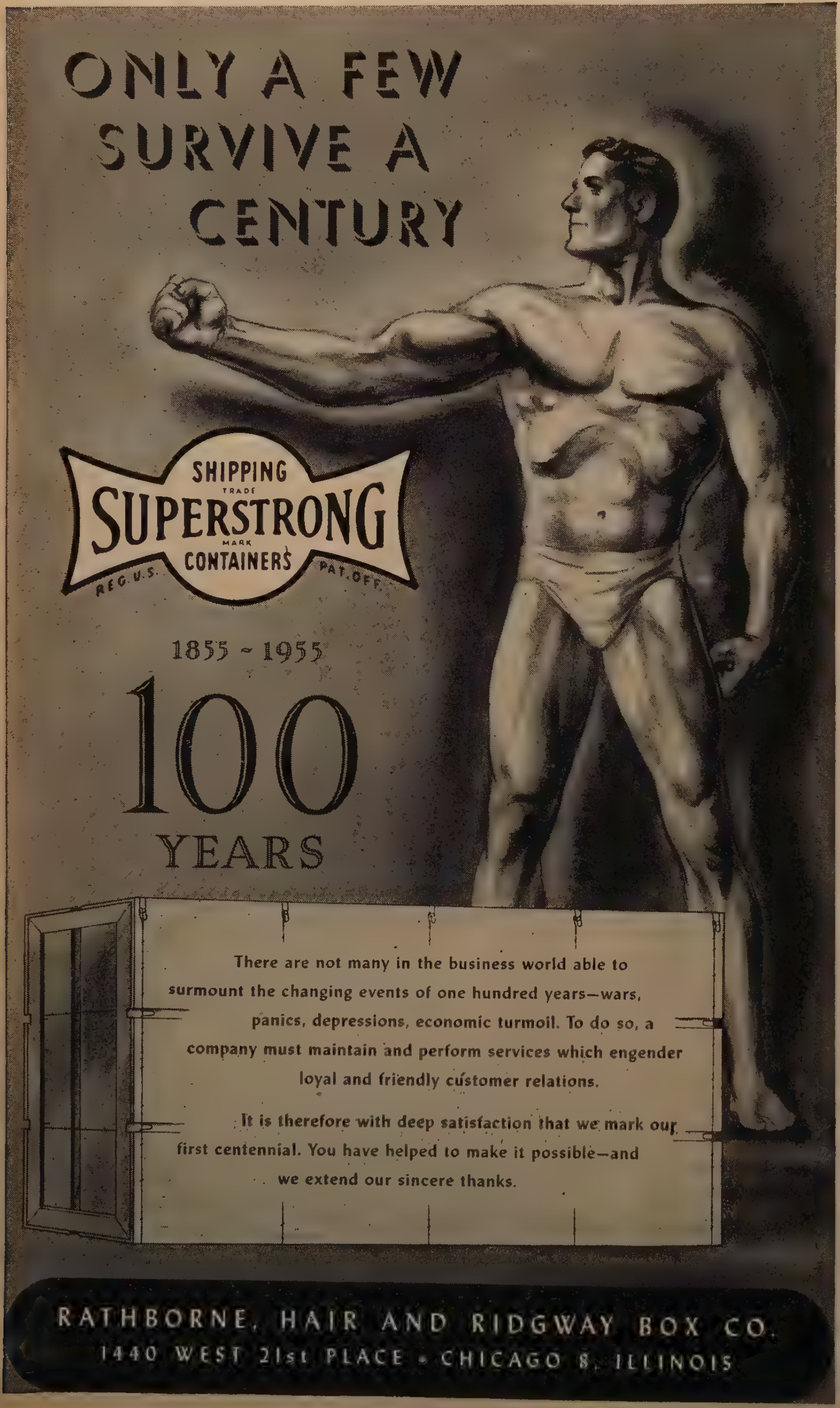
Viewing this picture, it is certainly to be hoped that investment circles will not turn away from providing the funds so necessary to the atomic age pioneers simply because they are unfamiliar with and therefore unsure in this new field. Many in finance, in considering the impact of the atom, have said to themselves — like Scarlett O'Hara — "I'll think about that tomorrow." Tomorrow is nearer than they think. Atomic energy is rapidly becoming so interwoven with the whole fabric of our economy that financial quarters must become informed in this area. The sooner they do so, the more opportunities will be open to them, and the more they can contribute to the development of a full-fledged atomic energy industry.

Judging from its recent attraction to atomic energy stocks, the public is ready and willing to help finance the building of a nuclear industry. So are many of the mutual funds and investment trusts. If this support is continued and broadened, the private atomic industry will be able to proceed full speed ahead. Should such financial support not be forthcoming, we can expect the government to take back the nuclear ball from private industry and run with it. A few members of Congress have predicted this course will be necessary. I believe they are wrong.

Indirect Effects

The peacetime development of atomic energy will, over the next decade, have myriad indirect effects upon our industrial economy, effects which, taken singly, will be neither obvious nor profound. For example, more than 1,200 industrial firms today are using radioactive isotopes routinely, using them because they do particular jobs better, faster or more economically. This number will double within the next year. Five years from now many thousands of companies in nearly all industries will be utilizing radioisotopes to produce improved products at less cost to the consumer. The application of radiation to "cold" sterilization and to chemical processing also comprises a promising field. Such activity cannot fail to have important ramifications in industry and consequently in the realm of finance.

One thing is sure: along with the uranium and thorium and zirconium necessary for future development of the atom, we'll also need a lot of silver and gold, or the paper that stands for it.



There are not many in the business world able to surmount the changing events of one hundred years—wars, panics, depressions, economic turmoil. To do so, a company must maintain and perform services which engender loyal and friendly customer relations.

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Transportation and Traffic

LEGISLATION proposing to amend the Interstate Commerce Act in conformity with the recommendations of the Presidential Advisory Committee on Transport Policy and Organization has been introduced in both houses of Congress. The Senate Bill is S. 1920 which was introduced by Senator Smathers and the House bills are H.R. 6141, introduced by Representative Priest and H.R. 6142, introduced by Representative Wolverton. The bills may be cited as the "Transportation Amendments Act of 1955." The proposed legislation would, among other things,

1. Limit the Interstate Commerce Commission's rate making power.
2. Reduce the suspension period of proposed rates from seven months to three months.
3. Modify the long-and-short-haul clause (Section 4) of the act.
4. Make the establishment of volume rates lawful if necessary to meet competition.
5. Redefine a private carrier and a contract carrier.
6. Repeal the bulk-commodity exemption applicable to water carriers.
7. Empower the commission to override state bodies on the continuation of services operated at a loss.

The bills have been referred to the committees on interstate and foreign commerce.

• ***I.C.C. Institutes Proceeding on*** Revised Rules of Practice: The Interstate Commerce Commission has issued a notice of the proposed cancellation of its General Rules of Practices and the adoption of revised rules submitted by the chairman of the Committee on Rules of Practice of the Association of Interstate Commerce Commission Practitioners. The proceeding has been designated as Ex Parte No. 195, Revised Rules of Practice Before the Commission. Written statements containing data, views or arguments concerning the revised rules may be filed on or before September 6, 1955. No oral hearing will be held, but if deemed necessary or advisable the matter may be assigned for informal conference wth officials of the Commssion and possibly later set for oral argument. The revised rules were published in Part II of the Federal Register of May 14, 1955.

• ***I.C.C. Amends Rate Basis for*** Truck "All-Commodity" Rates: The Interstate Commerce Commission, upon reconsideration, has amended its prior order prescribing the minimum basis for motor carrier "freight, all kinds" or "all-commodity" rates on mixed shipments from, to, or within points in Central, Trunk Line, New England and Western Trunk Line territories. In its recent order the Commssion found such motor carrier truckload rates to be unreasonably low and competitively destructive to the extent that they are below 45 per cent of the railroad Docket No. 28300 first class rates, including the Ex Parte increases, or, if less, the railroad "all-commodity" rates on mixed carloads. The Commission in its prior order held that such highway carrier rates should be no lower than 45 per cent of the motor carrier first class rates, or the railroad "all-commodity" mixed carload rates if less. The Commission did not materially change its prior findings with respect to railroad rates on "all-commodities" in mixed carloads. The Commission held that such rates were not unjust, unreasonable or otherwise unlawful, but disapproved the maintenance of such rates when subject to a tariff rule authorizing the inclusion of any freight in the mixed shipment at rates or charges lower than the applicable "all-commodity" rate. The Commission's report was issued in

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MC-C-1331, Merchandise — Mixed Truckloads — East, which embraced I. & S. M-3900, Various Commodities in West and South and No. 31006, Eastern Central Motor Carriers Association, Inc. v. Akron, Canton and Youngstown Railroad Co., et al.

• ***I.C.C. Acts to Reduce Delays in*** Disposing of Proceedings: The Interstate Commerce Commission has released a notice aimed at reducing postponements of hearing dates and extensions of time for filing briefs and other pleadings. Postponements of hearings and extensions of time in the future will only be granted upon substantial showings of necessity for such action. "The failure of a party to complete preparations for a hearing or oral argument, or the occurrence of a conflict of dates will not, standing alone, be considered as adequate to warrant postponement," the notice stated, and added that "the press of other work will not necessarily be considered as adequate to warrant the extension of a time period." The commission said that hearings will be assigned so as to give sufficient time for all parties to prepare, and due dates for briefs will be fixed so that sufficient time will be allowed for their preparation. "Those participating in proceedings before the commission will," the notice said, "be expected to be prepared for hearing on the dates they are assigned and to refrain from requesting extensions of time except where absolute necessity dictates such a request and warrants an extension."

• ***Further Hearing on Transcontinental*** Class Rates Set: The Interstate Commerce Commission has announced that further hearing in No. 30416, Class Rates, Mountain Pacific Territory, and No. 30660, Class Rates, Transcontinental Rail, 1950, will be held June 6, 1955, in San Francisco, Calif., before Commissioner Arpaia and Examiner Myron Witters. The proceedings involve proposed adjustments in class rates on shipments from, to and within Mountain Pacific territory which was not included in the Docket No. 28300 adjustment of May 30, 1952.

World of High Fashion

(Continued from page 19)

nual gross were not at least ten times the Frenchman's income.

More than one economist has pondered the unique problems of the fashion industry, wondering, for example, why one resourceful garment maker should not expand his volume to the point where mass production economies might be realized. That would be the businesslike thing to do. In the fashion industry, however, it is wholly impractical for the simple reason that you are not merchandising picks and shovels, but very possibly the world's most perishable commodity.

The law of supply and demand — not to mention a carload of other economic tenets—simply does not work when you are marketing a product which can be influenced by such unrelated factors as weather, international relations, the whims and fancies of so many women it's staggering to think about, and what society leaders turned up wearing or not wearing at last night's opera opening.

Being a fashion buyer for a department store is a little like picking your way through a wilderness that has more quicksand than solid rock to tread upon. The result is that the average fashion buyer has learned to put his eggs in as many baskets as are available. As one buyer remarked recently, "Everybody wants to be in on a new fad, but nobody wants to be stuck with it!"

Thus, a more or less standard industry practice is to purchase your merchandise not from one manufacturer — who, just possibly, may have missed the season's hottest fashion trends altogether — but in bits and dribbles from a great many garment makers. The reasoning is that by spreading your buying among many suppliers — or "resources" as they're known in the trade — you've never staked too heavily on any one producer or his designer. And with fair luck you'll probably wind up with more fashion hits than misses over the long run.

Another reason for the safety-in-numbers philosophy is the speed with which fashions change. As Alfred H. Daniels, merchandising vice president of New York's Abraham and Straus, once remarked, "The fashion cycle moves so quickly, it is a blur. Almost everyone instantaneously wants the same thing."

As Mr. Daniels explains it, television, Hollywood, the press and other media of mass communications have been something of a mixed blessing to the fashion industry. While they have made the average woman considerably more style conscious, they have also contributed immensely to the speed with which fashions can and do change.

To cite a hypothetical but illustrative case, suppose Garment Maker

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A turns up with a dress that becomes an overnight sensation. Fashion Buyer B who sensed this popularity in advance and ordered fairly heavily finds his stocks quickly depleted.

Now the logical thing would be for A to turn out additional quantities of this red hot number, and B to reorder, so both could get very rich very quickly. However, the grim facts of life are that, by this time, several hundred other manufacturers will have ground out, if not copies, certainly decidedly close approximations of the original product. The dress shows up overnight, or what seems like overnight to Garment Maker A, in hundreds of stores across the country and thereby begins to lose the quality of originality.

So by the time A and B can get together again, they might as well begin thinking about a new dress to capture tomorrow's market. In few other industries is there less of a premium on sagacious second-guessing.

Understandably, communication plays a pre-eminent role in fashion merchandising where it is highly essential that everyone pretty much knows what the other guy is up to. With the possible exception of the government's own Central Intelligence Agency, the hourly information available to the women's fashion industry is scarcely matched anywhere.

Specialized News Services

The only one-industry newspaper in the United States, Women's Wear Daily, with more than 100 accredited correspondents transmitting daily fashion reports from such newsworthy sources as the Senate press gallery, London, Paris, Hollywood, Palm Springs and New York's Seventh Avenue, is only the main link in an extraordinary communications network that includes two highly specialized news services, Women's National News Service and the Tobe Fashion Service, plus countless reports of varying frequency from leading New York buying syndicates. (Most New York "buying" syndicates, incidentally, do not actually buy merchandise for their member stores, but are chiefly responsible for funneling fashion information to assist local store buyers.)

As a result of this energetic news network, the merchandising vice president of Neiman-Marcus in Dallas or Daniels and Fisher in Denver can learn by midmorning the latest developments from every fashion center in the world. It would also seem that such a network should also free him of any anxiety that some foxy old fashion purveyor was about to catch him napping. That, unfortunately, is not quite the case.

Despite the volume of information available to him, the average fashion merchandiser lives in more or less constant horror that he may miss the mllion-dollar trend that swirls out of nowhere, catching the unwary with inventories that bargain prices won't move.

No fashion merchant is likely to forget Black Wednesday, the day in February, 1947, when M. Dior sprung his original "New Look" on the postwar fashion world. The "New Look," which almost overnight made the wartime short skirt as obsolete as ration coupons, cost the American fashion industry millions in out-of-date inventories. Fashion folk like to think that it couldn't happen again, but, understanding their industry, they know otherwise.

It would, of course, be much easier all the way around if you had merely to digest the Paris dispatches and then be guided accordingly. But even the top designers make their mistakes. A case in point is Dior, who, despite his 1947 revolution, has since proved only moderately successful as an instigator of sweeping new trends.

In 1953, Dior launched a counter-revolution by elevating skirts almost as much as he had dropped them six years earlier. This time the trend got nowhere. Even now there is considerable speculation in the industry regarding his "Newest Look" which, apparently, will be only partially accepted by American designers to the mass markets.

Such imponderables all contribute to the unique economics of the fashion business. Perhaps, as one New York garment maker expressed it recently, "The real trouble with this business is women — you can't tell today what they'll want tomorrow. The only thing you can really count on is that they'll want something different the day after tomorrow!"

And, as any husband knows, it's a woman's fundamental prerogative to change her mind — even if it does cost you a million dollar inventory.

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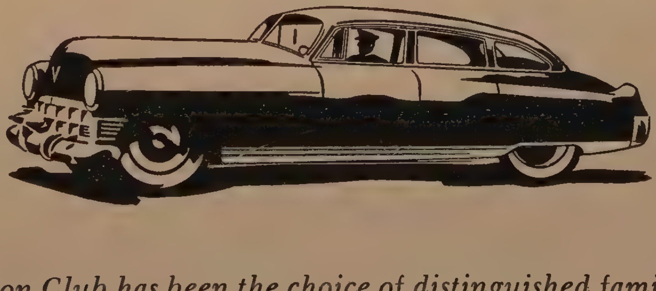

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New Products

Golf Barometer

Will the golf course be soggy or dry? Will the weather be changeable, rainy, windy, or fair? These questions are answered for golfers by the new Golfguide, a barometer calibrated in golfing terms. Designed by Taylor Instrument Companies, 95 Ames Street, Rochester, New York, the barometer sells for $12.

Auxiliary Gas Accelerator

Zenith Industries, 1491 Vine St., Los Angeles 28, California, is marketing a device for automatic shift automobiles that enables the driver to use either the right or left foot for operating the gas pedal. The auxiliary pedal eliminates the necessity of constantly shifting the right foot back and forth between the gas pedal and the brake. Made of rustproof steel and high grade rubber, the unit retails for $2.95.

Premium Safety Tire

Standard Oil Company (Indiana) has introduced a premium safety tire using a new tread material called Viprene, said to be the first synthetic rubber developed by private industry since the war. Viprene makes possible a tire of normal tread depth but with 50 per cent greater mileage than tires with normal tread depths now in use according to the company. The tires cost about twice the price of ordinary tires and are guaranteed for two years.

"See-Thru" Drawer Cabinet

General Industrial Company, 5738 N. Elston Ave., Chicago 30, Illinois is marketing a steel cabinet with eight crystal-clear, "see-thru" drawers for the storage of small parts. The cabinet is 4 inches high, 12½ inches wide and 6 inches deep and sells for $4.25.

New Lab Control Device

The Chicago Apparatus Company, 1735 N. Ashland Ave., Chicago, Illinois, has introduced an electronic laboratory device known as the Superelay. It is for use in controlling high current units such as incandescent lamps, heating elements and solenoids.

Electric Hoe

An electric hoe for mulching the soil of the flower bed, vegetable garden or lawn is being merchandised by Sears, Roebuck and Company under the Sears brand name of David Bradley. Employing tines mounted on a disc which move rapidly in an orbital fashion, the hoe works to a depth of 1½ inches. It comes in two sizes, a four-inch diameter hoe weighing seven pounds and a six-inch diameter hoe, weighing nine pounds. Chicago prices for the two hoes are $36.95 and $49.95 respectively.

Multi-Point Indicators

West Instrument Corporation, 525 N. Noble Street, Chicago 22, Illinois, has developed a system for taking nearly simultaneous temperature readings at several points on a single, centrally located pyrometer. The system consists of several thermocouples each at different locations and connected to a high resistance pyrometer equipped with a selector switch.

Case-less Utility Lamp

A lantern which utilizes its own battery for a carrying case has been designed by Burgess Battery Company, Freeport, Ill. Said to have four times the life of comparable lanterns, the "Radar-lite" combined battery-and-case measures 4 x 5 inches. It attaches to a removable twin light head with two insulated screw caps. The electrical circuit is completed by the metal frame of the light head itself.

Dimple or Diamond

A golf ball, designed for women golfers, has been introduced by the United States Rubber Company. Called the "U. S. Queen Royal" the ball meets all the required specifications of the U. S. Golf Association and is said to be designed to suit the emale golf swing. Sold at golf ourses, it will be available in either diamond or dimple cover marking.

or Trimming Lawns

A device for keeping lawns in tip-op condition has been announced y the Mall Tool Company, 7725 outh Chicago Avenue, Chicago 19, llinois. It's an attachment for an lectric drill that simplifies the task f trimming grass and weeds around rees and shrubbery as well as close o walks and driveways. It sells for 14.50.

as Cracking Generator

A streamlined endothermic at-mosphere generator, completely wired, piped, and assembled in a package unit has been introduced by indberg Engineering Company, 2450 W. Hubbard Street, Chicago 12, llinois. Called the Hyen Hydryzing Generator, it is a fully automatic process for producing low cost pro-tective atmosphere for bright hard-ening, bright annealing or bright brazing of steel totally free from de-carburization or carburization. It is available in 500, 750 and 1500 c.f.h. sizes.

Automation

(Continued from page 17)

automatic handling between machines. It is most certainly the next logical step in the progress of American productivity and undoubtedly not the last one.

What has it done to the American people? Like every major technological advance in history, it has been accompanied by a corresponding boost in the standard of living by providing more jobs, better working conditions, and higher overall pay. Citing again the automotive industry, we can study the effect of the automatic transfer machine on its working population. The big advances in the use of automatic machinery in the automotive industry have been made since the war; and the number of people employed by the automotive industry has increased by 39 per cent since 1946! Automation is not a social plague; it is an economic necessity.

What does industry hope to gain by this steady progression? The answer is simple: it hopes to stay alive. So long as the American democracy exists, so will the simple law of supply and demand govern its economy. Anytime a manufacturer can produce a comparable or a better product at a lower cost, he is going to prosper. That, after all, is the basis of business. And not only is industry bound to this iron-clad check and balance system, it is also supplied with the same conscience of democracy given to every American. Industry would hardly want to produce goods in such a manner that it would destroy the democracy that provides for its very existence.

Perhaps the completely automatic factory will never be accomplished; but if it is, it will be because the country is ready for it. It will not upset the balance. It will come simply as another step in the long evolution, as an economic necessity. To fear such a step is to fear America itself.

How else will industry benefit from automation? The owners of industry have not been and probably will never be the major beneficiaries of automation. If it is to survive industry must continue to plow back a great share of its earnings into the development of better products and techniques to meet competition. The industrial owner consequently finds himself on a very competitive merry-go-round where his per cent of the profits will most likely not change. The major beneficiaries are the consumers.

This is evident on the home front. Without the major advances in manufacturing technology, many of the appliances existing today would be a far cry from present automatic, labor saving devices. And what's more, they would cost a lot more. Television, of course, would be non-existent, and radio would be available only to a fortunate few. There

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would be no automatic washers, dryers, refrigerators, or electric blankets. The consumer just couldn't afford them. This makes it apparent that industry is not alone in its need for automation.

How can it be attained? Westinghouse has in its organization examples of each of the four types of manufacturing; the air arm division in Baltimore, Maryland, making airborne electronic equipment is largely a job shop type of operation; the motor and control division in Buffalo, New York, making medium and large size electric motors, utilizes a progressive line, type of operation; the appliance division plant in Columbus, Ohio, making refrigerators, is an example of conveyorized production; and some of Westinghouse's lamp division plants, where thousands of light bulbs are made each hour, are examples of automation.

Not all of any one plant is in one specific stage, of course, and there are certain products that demand certain types of manufacturing, either because of the nature of the product or of the process. Large, single-design steam turbines, for instance, would be difficult to conveyorize.

Next Higher Level

It is not realistic to expect to automate the job shop. But it can be raised to the next higher level of manufacturing. With additional investments in machinery and perhaps in floor area, any one of the manufacturing types can usually be raised one notch up the scale. This should be the goal of industry. With such an approach, economic automation can be realized.

Also, with this approach the change to automation in any operation will come about naturally and slowly. There will be no sudden shift of workers. It is true that some workers may be displaced by automation, but this displacement will be gradual, paralleling the evolution of automation. The electrical industry, for instance, will double itself in the next ten years and will employ an ever increasing number of people. In our lamp division plant, where we have moved forward toward the application of automation, we have approximately doubled our employment during the last ten years.

It may be time to look carefully at the general structure of manufacturing organizations. Are they organized to efficiently attack the problems connected with automation? Manufacturing engineers, methods engineers, and plant layout experts are needed, each with sufficient freedom to discover new manufacturing methods and initiate action on them. And there are, of course, a great many other factors which must be continuously re-evaluated to be effective.

But the most important question to the confused man on the street is: What will automation do for him? As said, it will provide a higher standard of living, but there's more to it than that.

Ability to Produce

The defense of America, now as in the past, depends on the ability to produce. In time of a major defense effort, national production facilities are strained to the last man-hour. Automation then assumes the role of a vital defense mechanism. The country can ill afford to neglect the excellent opportunities it presents.

There is another facet of America that makes automation a necessity. The working population and the total purchasing power of this nation are naturally closely allied. The gross national product is increasing at the rate of 3.5 per cent a year. However, the American working population is increasing at the rate of only 1.8 per cent a year. Something, somehow has to take up the slack if the level of production required to improve our current standard of living is continued. Automation is that something. It helps the worker by providing him with means of being more productive. So automation is needed just to maintain the present rate of improvement in the standard of living.

The effect of automation or any other technological advance on the very young and the yet unborn Americans is of tremendous importance. Their education will be increasingly more vital. Largely as a result of automation, people will have more time, more money, and more need to go to school. The jobs they will be filling in industry will be more demanding of their talents and their mental powers than ever before. And as the educational level of industry increases, it will continue to complement industrial prog-

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ess, thereby giving form to a still more advanced technology.

There are literally pages of corroborating data and favorable indications to support the industry claim that automation — far from being a lemon — is an absolute necessity for American progress. This is a nation which may never see the limit of its potential. And its greatest asset of all the ability to progress and to accept change. It is inherent even in our system of government.

The problem that should be of greatest concern to the American people today is not how to stem the tide of automation but how to bring about more quickly.

Our Cover

(Continued from page 5)

ce was quickly adopted by other airlines and today it is industry-wide.

"The first year they were aboard we had $60,000 of passenger business," Mr. Patterson reports. "Last year we did $200 million worth and the presence of our stewardesses certainly was an important factor."

The big trouble all airlines have experienced with the stewardesses is keeping them. The average length of service is 27 months with 99 per cent of the resignations due to matrimony.

However such problems were not unforeseen when S. A. Stimpson, who at the time was division traffic agent in San Francisco, California, wrote this memo, dated February 24, 1930, to headquarters. It read ". . . I am not suggesting at all the flapper type of girl, or one that would go haywire. You know nurses as well as I do, and you know that they are not given to flightiness — I mean in the head. The average graduate nurse is a girl with some horse sense and is very practical and has seen enough of men to not be inclined to chase them around the block at every opportunity."

It was a young San Francisco nurse, Ellen Church, who had first approached Mr. Stimpson with the suggestion that the "couriers" the line was going to hire should be women. Subsequently she and seven others were hired for trial use on flights between San Francisco and Chicago. Service was inaugurated on May 15, 1930.

For many years the airline stewardess professon was limited to girls with Registered Nurse certificates. This prerequisite was modified at the start of World War II because of the military demand for nurses. Present requirements call for an R.N. certificate or two years of college, or one year of college added to one year of business experience.

To be eligible for training, aspiring stewardesses must be unmarried between the ages of 21 and 27. Height limitations are 5 feet, 2 inches to 5 feet, 7 inches; weight 135 pounds or less. At least 20/40 vision in each eye is mandatory. General good health and a pleasing disposition are of prime importance.

For the record, the average stewardess today is 5 feet 4½ inches tall, weighs 116 pounds, has a 24 inch waist and a 34½ inch bust. In 1930, the average stewardess was an inch shorter, weighed 108 pounds, had a 24½ inch waist and a 32½ inch bust.

The early stewardesses had no specific instructions to follow aside from the admonition to "make themselves useful." This, they proceeded to do. They tidied up the cabin; served coffee, sandwiches and apples; answered queries on weather, geography and aeronautics as well as they could; and even pitched in to help load baggage and assist in fueling.

Today, girls who qualify get six weeks of training. They study ticketing procedures, schedules, tariffs, equipment and related subjects.

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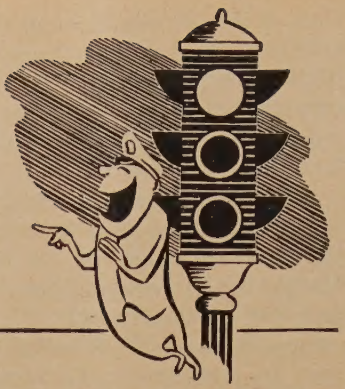

A son in college was applying pressure for more money from home.

Here's what he wrote his Dad—"I cannot understand why you call yourself a kind father, when you haven't sent me a check for three weeks. What kind of kindness do you call that?"

His Father replied immediately—"That's unremitting kindness."

•

Two confirmed bachelors sat talking. Conversation drifted from politics to cooking. Said one: "I got one of the cookery books once, but I never could do nothing with it."

"Too much fancy work in it, eh?"

"Yes. Every one of the recipes began the same way—'Take a clean dish'—that settled me."

•

The big traffic cop glared at his most recent victim, then said with a half apologetic grin, "Oh, so you're a minister. Now, don't you tell me you didn't see that stop sign."

"Well, no, officer," replied the parson. "I saw the stop sign all right. The thing is, I didn't see you."

•

A university graduate student, applying for scholarship, explained as follows, why he needed assistance: "My wife and I are separated now, which has left me as my sole means of support."

•

A hillbilly was called as a witness in a lawsuit.

"Can you write?" asked the lawyer.

"Nope."

"Can you read?"

"Well I kin read figgers pretty good, but I don't do so good with writing. Now take these signs along the road. I can tell how furto but not whurto."

•

A mother told her small son, going on four, "I do not have a baby any more. I guess I'll have to get another baby, now that you've grown to be such a big boy."

The youngster thought it over. "Well, Mummy," he said, "You'll keep me as a friend, won't you?"

•

Used to be that a schoolboy just got a bawling out when he brought home a report card with low grades. Nowadays he gets drafted.

A golfer, trying to get out of a trap said, "The traps on this course are very annoying, aren't they?"

Second Golfer, trying to putt—"Yes, they are. Would you mind closing yours?"

•

A soldier parked an army jeep and started walking down the street. A policeman called after him: "Hey, buddy, drop a nickel in that parking meter."

"Put it in yourself," the GI yelled back, "That jeep belongs to you as much as it does to me."

•

Nagging wife, relenting, bought her husband two ties as a birthday gift. Finding them on his dresser the husband put one on and made a grand entrance to breakfast.

"Humph," snorted the wife, "so you didn't like the other one."

•

The futility of riches is taught very plainly, both in the Bible and in the income tax forms.

The children were in the midst of a free-for-all when father unexpectedly entere the room.

"Tommy, who started this?" he asked th nearest youngster.

"Well," replied Tommy, "It all starte when Albert hit me back."

•

"Dad, guess what? I've got my first par in a play," said the budding young acto "I play the part of a man who's been married for 25 years."

"Well, that's a good start, son," replie the father. "Just keep at it, and one o these days you'll get a speaking part."

•

Friend—"Has your wife changed ver much since you married her?"

Husband—"I'll say — my habits, m friends and my hours."

•

At the baseball game the boss suddenl came in behind his office boy, and tappe him on the shoulder.

"So this is your uncle's funeral?" he demanded of the startled youth.

"Looks like it," the quick-witted youngster replied. "He's the umpire down there.

•

A little boy was sitting on the front steps and the salesman asked—"Is your mothe home, little boy?"

"Yes, sir," replied the little boy.

After knocking several times and gettin no response, the salesman turned to th boy—"I thought you said your mother wa home?"

"She is," replied the boy, "but I don' live here."

•

Heard in a college dormitory: "Is thi dance formal or can I wear my ow clothes?"

"It's a note to us from our absent treasurer and reads as follows: 'Hi suckers . . .' "